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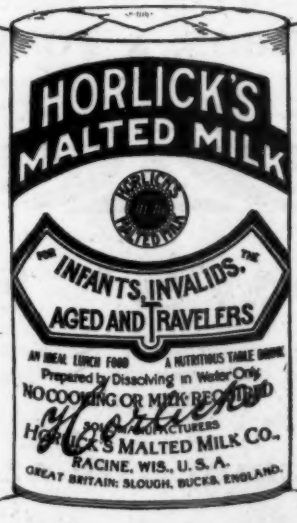

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General Scientific

PSEUDO-HYPERTROPHIC MUSCULAR DYSTROPHY.

A Report of Two Cases.*

M. H. FRANTZ, M.D.
New York.

Progressive muscular atrophy is rather an uncommon disease and pseudo-hypertrophic muscular dystrophy, one of its forms, is still more uncommon. This fact, together with the circumstance that two cases have presented themselves to us at our clinic within a period of one month, has made us feel justified in making a report of them.

H. B., male, nine and one-half years old, born in the U. S., was kindly sent to us by Dr. Max Grossman, of Brooklyn, complaining that he could not walk well unless supported; that if he is seated and wants to get up, he has to raise his trunk by means of his hands. The child also does not talk "as sensibly as a child of his age should." He does not remember things well and is rather backward in school. The boy upon questioning states that he has much difficulty with his arithmetic.

Family History.—Is negative except that the mother of the patient is weak and nervous and a maternal uncle is insane.

Personal History.—Mother well during gestation. Normal labor. Breast fed eight months. First tooth at nine months and first walked at about nine months.

Illnesses.—Measles at three and a half years. It is stated that when the child was about one year old he had an attack of convulsions. This followed directly after a severe fever that the patient had. The first convulsion lasted about fifteen minutes, during which time the boy frothed at the mouth, his eyes turned and he was unconscious. He did not jerk his limbs. When he came out of the attack he was confused for a time but soon recovered consciousness. He had similar attacks about two or three times each week over a period of six weeks. They never recurred after that. From the age of sixteen months the child had been having difficulty with his walking and in the last two years it had become progressively worse. At the age of four years he was sent to the hospital suffering from what was supposed to be spinal meningitis, but at the hospital it was said that he had pneumonia.

Status Praesens.—Patient is emaciated. Cir of head 21 inches. Good crop of hair. Eyes react to light and accommodation. Through a Binet-Simon test we find that the boy has attained a mental age of 7.4. Cervical glands palpable. Teeth misshapen, some carious. Tongue deviates to the left, fine tremor. Tonsils slightly enlarged. Apex beat diffused. Heart beat rapid, no murmurs. Some dullness elicited over the left chest anteriorly. No mass palpable in the abdomen, but some tenderness is present. Testicles not descended but can be brought down with some difficulty. Penis undeveloped. Pubis quite prominent There is a turning in of both feet. There is atrophy of the muscles of the arm as well as of the hands; also of the thigh muscles; but there is hypertrophy of the calves. The feet are blue and cyanotic and there is an extension of the great toe upward on both sides. The heels are reddish blue with the appearance of a trophic disturbance.

Parts Measured:

Cir. 6 in. below the acromion—right, 6 in.; left, 6 in. left, 6 in.

Cir. 2 in. above the wrist joint—right, 4½ in.; left, 4½ in.

Cir. 5 in. above the patella—right 10¾ in.; left, 10½ in.

Cir. 2 in. below the patella—right, 10½ in.; left, 10½ in.

Cir. 3 in. below the malleolar process—right, 7½ in.; left, 7⅝ in.

There is no general anesthesia; hyperesthesia is noted over the abdomen and the inguinal region as well as in the feet. The touch sense is intact. The pain sense is intact on the posterior aspect of the body with some hyperesthesia along the lumbar region.

M. C., male, aged nine and a half years, born in the U. S., was also sent to us by Dr. Max Grossman, of Brooklyn, with a complaint that he is "weak"; that he will suddenly fall down while walking and that then it is impossible for him to get up without support. This occurs from ten to twenty times a day. He fell very frequently as a child but the mother thought nothing

* From the Department of Neuropathology, New York Post-Graduate Medical School and Hospital.

of this. He walked fairly well up to the age of eight years, and since then he has fallen very frequently. This falling is getting worse. Mother has consulted many physicians who told her that he would "grow out of it."

Family History.—Negative except that two maternal uncles have died at the age of seventeen and nineteen years respectively of a disease in the course of which they would suddenly fall down while walking. In them also the condition started at the age of eight

years and they gradually lost the power of walking altogether. The mother is quite sure that the patient's condition is identical with that of his uncles.

Personal History.—Mother during gestation was living under great stress because her husband was ill with typhoid fever. The labor was instrumental and lasted fourteen hours. Child was breast fed for seventeen months. Began to walk at the age of seventeen months. First talked at one and a half years. First teethed at 14 months. Never had convulsions. Measles at the age of four years. Diphtheria three times (?). No other acute infectious diseases. The mother states that from the time of birth the child was backward and did not do well on the breast, although she nursed him 17 months. His abdomen was prominent and rather out of proportion to the rest of his body. He was weak at all times and was continually given tonics. He did not run around as other children did. The mother states that the child was delicate all along until he became eight years old, when she observed that his knees gave way when he walked, that is to say, he would just fall down and would then raise himself on his hands. The mother has noticed that these falls are becoming more frequent. He at first would fall about 3 times a day; now he falls about twenty times a day.

In the clinic the boy answered simple questions readily and seemed to be in a jocular mood.

Status Praesens.—Patient is a young male of average height. Fairly well developed. Cir. of head 20 inches. The Binet-Simon test reveals a mental age of 9.4. Hair grows irregularly. Slight prominence over the left frontal region. Ears rather outstanding. Eyes somewhat sunken. Eyes react to light and accommodation. No facial asymmetry. Teeth in upper jaw irregular, a few carious; lower incisors serrated; several teeth missing in the lower jaw. Cervical glands not palpable. Heart's action regular, sounds clear, no murmurs. Lungs negative. Abdomen rather tense in spite of the fact that prior to the examination there was a bowel movement. There seems to be a general tenderness on superficial palpation. Abdominal and epigastric reflexes present. Genitals of fair size. There is a drawing up of both testes on the scratching of either thigh. Knee jerks absent. Right and left Babinski. Slight equinovarus on both sides. No clonus. Lumbar lordosis.

Measurements:

Cir. of upper arm 4 in. above the olecranon process—right, 6½ in.; left, 6½ in.

Cir. 6 in. above the patella—right, 12½ in.; left, 13 in.

Cir. 1 in. above the patella—right, 9⅜ in.; left, 9½ in.

Cir. 4 in. below the patella, calves—right, 11 in.; left, 11 in.

Patient standing with eyes closed shows some ataxia. He stands with body bent forward and buttucks extended. He walks on his toes with his feet spread apart, apparently with great difficulty. There is a waddling gait. When sitting on the floor and attempting to rise he gets up on his knees, then on "all fours," and so raises his trunk.

In the first case, H. B., it is seen that the onset of the disease took place at the age of sixteen months,

this being preceded four months before by some acute infectious disease which was characterized by convulsions. Here the etiology must be attributed to this infection. In the second case, M. C., it is seen that the child was backward physically and was not normal from

earliest infancy. In this case also there is a history of heredity on the maternal side. The inference would, therefore, be that this case is a congenital condition.

Comment.—Erb [1] classifies progressive muscular atrophy in the following way:

1. Dystrophia muscularis progressiva infantum.
   (1) Hypertrophic form:
      (a) With pseudo-hypertrophy.
      (b) With real hypertrophy.
   (2) Trophic form:
      (a) With primary involvement of the face (infantile form of Duchenne).
      (b) Without involvement of the face.
2. Dystrophia muscularis progressiva juvenum (Erb's juvenile form). Osler defines pseudo-hypertrophic muscular atrophy as "that form of muscular dystrophy which attacks first the muscles of the calves of the legs."

There exists quite some literature on progressive muscular atrophy but not very many cases of the pseudo-hypertrophic form are recorded.

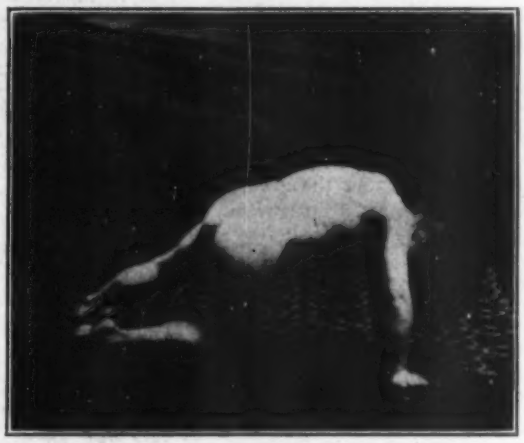
Etiology.—The etiology of this condition is rather obscure. The condition occurs more frequently in males than in females. In Collins and Climenko's [2] series of fifty cases of progressive muscular atrophy, forty occurred in males and ten in females. Heredity is considered an etiological factor by some, e.g., Bariskow, Sveaze, Friedreichs, Marie, Londouzy and Dejerine. Jendrassik does not share this opinion. Some consider rickets a factor. Marquardt [3] in a series of sixteen cases found the etiological factors to be in one case heredity, in another a neuropathic taint, and in fourteen, various other causes. Erb in a hundred cases found heredity a factor in 56 per cent.

Symptomatology.—The symptoms are characteristic: the winged scapulæ; the sliding through of the shoulders when the patient is held up under the arms; the waddling gait; the awkwardness of the patient's movements; the atrophy of the muscles of the upper extremities as well as of the back, together with the pseudo-hypertrophy of the muscles below the pelvic girdle, such as the glutei, quadriceps, adductors and the calf muscles.

Pathology.—Erb believes that the alterations in the peripheral muscles are secondary to the disease of the cells in the anterior horn. Holmes believes that the alterations in the nervous system are secondary to the changes in the peripheral muscles, while Oppenheim [4] also believes that it is primarily a disease of the muscles and also that there is a congenital anomaly of development in the muscle system.

Observed changes in the muscles are the following: co-existing atrophy; increase of muscle nuclei; hypertrophy of primary fibres; proliferation of internal perimysium and the deposit of fat cells in the latter which may supplant muscle fibres; formation of fissures and vacuoles in fibres and entire disappearance of individual muscles.

Erb believes hypertrophy is preliminary to atrophy. Changes have been observed in the central nervous system by Strumpell, Sacks and Brooks, namely, a shrinkage of the cells in the dorsal ganglia. F. C. Potter [5] found a fatty infiltration in the muscles (with smallness and degeneration of peripheral nerves); diminution in size and degeneration of the anterior roots with degeneration and some disease of the anterior horn cells, most marked in the ventro-mesial group and in the cells of Clark's column, and especially in the lumbar cord. McCruddin and Sargeant [6] examined a twenty-four hour specimen of urine and found a large quantity of creatin but no acetone and no diacetic acid, which showed this to be a case of creatin-urea without acidosis. In a blood examination made in the case they found a low glucose and low cholesterin content. The analysis of these findings would show that the creatin in the urine suggests improper oxidation. The low cholesterin suggested adrenal involvement, especially



with hypoglycemia. In two cases Collins and Climenko found no changes in the general nervous system. Atrophy of the bones has been observed by Friedreichs, Schulte, Lloyd, Clark, Spiller and others. The electrical examination shows a diminution of excitability but no reaction of degeneration.

Diagnosis.—Gowers lays great stress as an early diagnostic sign on the enlargement of the supraspinati after wasting of the latissimus dorsi and of the lower part of the pectoralis major.

Erb lays great stress on the winged scapulæ, the waddling gait and the awkwardness of the movements, together with the getting up on "all fours," as guiding symptoms. The pseudo-hypertrophy of the calves is characteristic.

Pseudo-Hypertrophic dystrophy should be differentiated from:

1. Chronic progressive anterior poliomyelitis.
2. Congenital spastic paraplegia.
3. Progressive muscular atrophy.
4. Syringo-myelia.
5. Myelitis.
6. Polymyositis.

In (1) there is reaction of degeneration and no pseudo-hypertrophy. In (2) there is spasticity. In (3) there is atrophy and fibrillary twitching. In (4) there is *main en griffe,* reaction of degeneration, and dissociated sense.

In this differentiation these further facts must be borne in mind:

1. The early onset.
2. The atrophy of the muscles above the pelvic girdle.
3. The pseudo-hypertrophy of the muscles below the pelvic girdle.
4. The pseudo-hypertrophy of the calf muscles and the getting up on "all fours."

Treatment.—The treatment of this condition is very unsatisfactory. Sachs and Brooke advise electrical treatment. Collins and Climenko found thyroid, thymus and strychnine not beneficial. McCruddin and Sargeant give adrenalin and pituitary extract and found in one case that the blood-sugar content as well as the cholesterin content increased.

As to the treatment of our cases, no definitely bene-

ficial results have been obtained. H. B. was not an ambulatory case and so was admitted to a hospital. M. C. was treated with strychnine with no apparent results. Following McCruddin and Sargeant's idea he was recently started on pituitary extract and adrenalin orally, and it must be said that after two weeks' treatment his mother as well as friends of the family have observed that he walks more firmly. The mother even ventures to say that he now falls on an average of but three times a day, whereas he used to fall about twenty times. He can pick up things from the floor without support. It will be interesting to see future developments of the case.

I am indebted to Prof. M. G. Schlapp for his kind permission to report these cases.

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348 St. Ann's Avenue.

ROUND CELL SARCOMA.

ADDISON H. BISSELL, M. D.,

HOUSE SURGEON, HOUSE OF RELIEF OF THE NEW YORK HOSPITAL.

New York.

The subjoined case, from the service of Dr. Turnure, is deemed of sufficient interest to warrant publication.

J. P., age 20, Italian, driver.

C. C.—Pain in left shoulder.

Family.—Negative throughout.

Past.—Negative. Moderate drinker. Denies venereal disease. Says he never was sick in his life.

Present.—Four months before admission while loading his truck he first noticed pain in his left shoulder. Denies that shoulder was ever injured. Thinking that he had "strained his arm," he laid off work. Pain was not at all severe, but it has been so persistent that he has not worked since. For three months could not raise the arm above his head.

Picture taken on admission—December 18, 1916, four months after first symptoms of pain.

First Month.—Slight persistent pain—worse at night. Sleep not disturbed.

Second Month.—Increasing pain day and night. Sleep disturbed.

During the last week he was at home in bed; walking increased the pain.

It was only during that time that he noticed his left shoulder to be larger than the right. His family doctor had also examined it and treated him for "rheumatism."

Physical.

General physical shows a normal young man of more than average physique.

Surgical Condition.—A symmetrical swelling around the head of the left humerus, about the size and shape of an orange. Consistence, firm; no fluctuation. Skin under slight tension. Raising arm causes pain.

All movements at the joints are limited. Can not push up arm in extended position over his head.

Compare fascies with picture taken six months before.

Neck.—Lymph nodes of both anterior and posterior cervical chain are palpable, especially the posterior chain.

Axillary and epitrochelar nodes not enlarged.

Wassermann.—Dec. 18-1916. Negative.

Urine.—Before operation.—Alk, amber, clear, gran. prec., alb and sug, negative. Mx., negative.

After Operation.—Acid, amber, clear, 1030, floculent precipitate, mod., clond of albumin, no sugar. Full of hyaline and granular casts, scattered w. b. c. Calcium oxylate crystals.

Blood Count, r. b. c.	4,860,000
W. b. c.	8.000
Polys.	78%
Lymph	14%
Mononuclear	6%
Transitionals	2%

Operation.

Refused to submit to shoulder girdle amputation, but practically demanded a removal of the swelling.

Tumor exposed by splitting deltoid and found to consist of soft vascular mass, very friable, about 4 inches long by 3 inches wide, surrounding the whole anterior surface of the head of the bone. This tumor was removed and bone exposed.

Rectangular piece of bone 1½ by ¾ inches wide removed by chisel from anterior surface of head of humerus. Whole head of bone found to be occupied by a cyst—poorly organized, almost liquid and very vascular. Had the appearance of a bone cyst. Tumor tissue curretted and wiped away. Considerably larger portion of anterior surface of humerus removed, then it was noticed that the humerus was fractured ½ inch below the head.

Front view—June, 1917.

Bleeding stopped; wound closed by layers.

Path. Report.—Typical malignant looking; round cell sarcoma.

Second Admission.

Patient refused other operative treatment, but said he would go to the General Memorial Hospital for radium and *x*-ray treatment. Had not reported there a week after he left. Says he went there in January and was treated for five or six weeks. Then as the swelling was increasing he stopped going.

Brought in again in ambulance, June 12, because he had fainted.

Prone position—June, 1917.

C. C.—Pain, swelling, occasional hemorrhage. Pain constant and severe. Necessary to give morphine constantly.

Physical.—Pale, cachetic.

Left Shoulder.—A huge, cancerous mass. Acepidures. Skin very tight. Huge vessels just under skin which bleed profusely on slight manipulation.

Lateral view—Taken June, 1917, two weeks before death.

Abdomen, Legs and Right Arm.—Negative. *Neck.*—As before, nodes not much, if any larger.

Lungs.—Scattered crepitant rales. Pulmonary oedema on admission which cleared up under treatment. Otherwise negative.

Heart.—Rapid, weak, muscular quality poor. Blowing cystalic murmur at apex.

Temperature.—First admission, 99°, 99.6°; second admission, 101°, 102.4°

Patient gradually became more cachetic; heart poorer and poorer, and on July 3, patient was found dead in bed.

Carotid Body Tumors.

Tumors of the carotid body are not as rare as they were at one time thought to be, according to F. B. Lund, Boston. He reports a case, the only one he has found on record which has been successfully operated on for an intercarotid tumor on both sides of the neck; the first operation, on the left side, at the Boston City Hospital, by Dr. George W. Gay in 1887, prior to any reported cases in the literature thus far discovered; and the second operation on the right side involving the ligation of the common carotid and removal of an inch of the internal carotid the operation was performed by Lund twenty-nine years later. The patient now aged 54 is in perfect health. The fact that Gay failed to recognize the condition does not detract from his skill in removing it, and it was one of the few cases in which the tumor was removed without ligation of the common carotid, which made the second operation possible so long after. He gives a description of the organ and its possible functions. It is at present classed as a chromaffin organ of which the suprarenal is the most important type. The tumor apparently grows as a hypertrophy without causing trouble for a long time, and is certainly benign for a long period, though later metastases may appear.—(*J. A. M. A.*)

WAR DIET BY PRESCRIPTION.

CHARLES O'BRIEN.
New York.

We probably will not need to adopt an "iron ration" to help win the war against Germany. But we need and are being asked by our food administration to practice such food economies as will leave the greatest possible surplus of products for shipment to our allies. The menace of the submarine calls for unprecedented exports of foodstuffs. Billions of pounds of our food are needed as much as our billions of dollars and our millions of men.

That in itself is sufficient reason for every possible food saving. But there is another that will appeal to the good sense of the physician. It is the better health that comes from not overfeeding, as conclusively proven by the food economies practiced by the European belligerents, particularly Germany herself, whose economy has been most necessitous and most highly organized.

This is not to say that Germany may not now have passed the point where reduction in food intake is no longer beneficial. The writer knows nothing of conditions there since the first of the present year. But his judgments are based on conditions as they were before that time and after two and one-half years on "iron rations." But it seems likely that with our blockade of her neutral neighbors she is now in more straightened circumstances than she was. It is possible that she may already have passed the point of efficiency in food reduction. When, however, the war is over and its history comes to be written, among the facts that will be recorded scientifically will be those which will show that the food economies practiced vindicated some of the more radical theories of nutrition, particularly those calling for a low-calorie diet standard and less proportion of protein intake.

The suggestion indicated is that the physician in America should lose no opportunity to educate his patients as to the value of a reformation of their diet, that he prescribe a diet where practicable and at every opportunity that will not only tend to help in the general program of food economy but tend as well to raise the general average of health. It is a matter that each physician should take to heart for patriotic reasons and it should be taken up by the various medical organizations in a systematic way. The total saving would be enormous, not only in foodstuffs but in life and health as well.

In this respect the physician possesses a power that the government itself would find it difficult to wield. Governmental rationing would meet with opposition. But rationing by a physician is taken by a patient as a matter of course. The patient expects it in the majority of cases. He doesn't like it, but he submits; at least until he is well again. When he gets sick once more he comes back for another dose. If our physicians will make it a point in the crisis of the war to impress on the patient the reasons why he should stick to the prescription, something of permanent benefit will result.

Our nutrition experts are among the best in the world. They have set the pace. Such men as Chittenden and Fisher and Graham Lusk proved to the world the soundness of the contentions of Fletcher, who was a pioneer in the fight against the old Voit standard. But as a people we have not followed them.

In Germany their teachings were heeded and Germany went into this war with a program of food pre

paredness which has been the chief economic factor in enabling her to hold out as she has. At the beginning and as a basis for her food economies she had the judgment of nutrition experts as to what she could and could not do. She has not been able to follow their recommendations exactly, of course, for she has had to trim her program in accordance with the exigencies of the situation as regards supply. But on the whole she has conducted a vast laboratory experiment in dietetics and she has found that it paid. It has helped her hold out and it has benefited the national health.

Before the war the death rate among German men, according to Dr. M. Hindhede, of Copenhagen, one of the world's greatest food experts, had risen to 18.2 per thousand per annum. His figures show that in the fifty years preceding the German had become the world's champion meat-eater. The proverbial German was rotund. Today he has more of a figure à la mode. He has lost his fat by the billion pounds. His life is not so pleasant as it was, but it is, or was, healthier. The death rate in Berlin last December had fallen to 12. And London under the mere restriction of higher prices and before any rationing was attempted had achieved a like result.

But it was under the efficient management of the American Relief Commission in Belgium that the most remarkable achievement that has yet come to light was made. According to Horace Fletcher, a member of the commission, who was partly instrumental in the adoption of its food prescription, a death rate of but eight was recorded there and, he says, the common diseases of civilization were all but eliminated.

Now compare the above with the record of New York City before the war. She claimed the lowest death rate in the world. It was between 14 and 15 a thousand per annum, as against: Berlin, 12; London, 12; and Belgium, 8, almost one-half of New York's prewar record.

If the public knew these things, all but the gluttons would reduce their food intake, maybe by cutting out one meal a day, or cutting down the amount eaten at three meals. But the public doesn't know.

The physician, however, can reach them as no one else can, intimately and effectively. His word carries weight. The physician who sees the point and acts accordingly will be doing his country a patriotic service.

The slogan should be: EAT LESS AND WIN THE WAR.

Mental Hygiene.

Owen Copp, West Philadelphia, Pa., pleads for the establishment of boards of mental hygiene as well as boards of health and other similar agencies. He enumerates the duties of such a board as he conceives it, and discusses the question whether it should be a supervisory or a controlling body, favoring the former. He does not find from his observations that the control regime has really the justification of greater economy. The ideal form of administration is one that safeguards at once against arbitrary dictation, on the one hand, and, on the other, against tendencies toward indecision and ineffectiveness. He would have absolute local control of executive details in local spheres, and absolute control by the general board of extrarelations and interrelations and general policies of local units, both under principles and rules of procedure. The right of initiative should be reserved to each local unit in its sphere of responsibility, subject to suggestion by the general supervising board whose powers, are fixed by law. Pure supervision within both state and national fields would be best afforded by private agencies organized under the leadership of the national committee for mental hygiene, its state societies and allied associations. Relief from political influence is the foremost requirement in any field of public endeavor of this kind. He gives his views as to the general administration of the public institution for the care of those in need of mental hygiene or cure.—(*J. A. M. A.*)

DORSAL DISLOCATION OF THE GREAT TOE AT THE INTERPHALANGEAL JOINT.

ROYALE HAMILTON FOWLER, M.D., F.A.C.S.
ASSOCIATE SURGEON, GREENPOINT HOSPITAL,
Brooklyn, New York.

A. M., age 18, male, injured the great toe of the right foot three years previous to consulting the writer, when kicking a football. Since this time he has experienced pain in the foot while walking, deformity and disability.

Examination revealed backward displacement of the distal phalanx of the great toe. The accompanying illustration from an *x*-ray taken by Dr. Chas. Eastmond shows the dislocation to be incomplete. Efforts at reduction had failed.

Under gas anesthesia attempt at forceful reduction failed and an incision was made over the joint and the contracted tendon of the extensor proprius hallucis was divided. The bone was then easily replaced.

The wound healed by primary union and the patient was subsequently enabled to walk upon the normal weight bearing surface of the foot without discomfort.

Comments.

There are but few cases of interphalangeal joint dislocations of the foot on record. The majority have been noted in the great toe. As compared with dislocation at the metarsophalangeal joint, a common injury, this particular dislocation is very rare. There is a notable absence of recorded cases in the standard textbooks.

280 Jefferson Avenue.

OZONE AND OBFUSCATION.

JACQUES W. REDWAY, F.R.G.S.
Mount Vernon, N. Y.

A correspondent asks my method of determining the proportion of ozone in the air, and also what its physiological effects are.

So far as the first part of the question is concerned, I have never made a quantitative determination of ozone and, most likely, I never shall make one. With reference to the second part of the question, I do not know.

Perhaps the easiest way to understand the whole matter is to consider an analysis of the air. The following table is the result of careful analyses made by English chemists—I think, Ramsay and Rayleigh—and is now generally accepted as a standard, one million parts of air being the basis:

Nitrogen	771,160
Oxygen	206,594
Argon group	7,900
Carbon Dioxide	336
Nitric Acid	8
Ozone	1.5
Ammonia	0.5

From the nature of the case these values are not constants. In the first place, there is a deficit of 14,400 parts, which represent the water vapor and foreign content of the air. But the variations in the propor-

tions of water vapor are great, and these variations are sufficient to change the absolute percentages of the first three elements materially. In the second place, the carbon dioxide content is by no means constant. It may be two or three times as great in one place as in another—as Pittsburgh and Yuma, for instance—it also may vary greatly from day to day in the same place. The table, therefore, possesses an empiric rather than a precise value.

Ozone is a variable constituent of the air. During a thunderstorm there may be so much present that the odor is perceptible; in localities where there is much coal smoke it seems to be absent. A possible reason therefor is the assumption that it oxidizes the nascent carbon mixed with the gaseous products of coal combustion.

The popular notion about the ozone of the air is much of a humbug. The overpowering individual who announces in a don't-contradict-me manner that the air of that bracing October morning is full of ozone is likewise a humbug. Inasmuch as the proportion of nitric acid is five times as great as that of the ozone, why not assume that the nitric acid produces all this exaltation? It is quite as active an oxidizer as the ozone and, in the bulk, there's a lot more of it. What, then, is the condition, or what the content of the air that causes the physical and mental exaltation of those delightful "ozone" days? I don't know, but I should like uncommonly well to find out.

On the other hand, there are the days in July and August when the exertion of sitting still in one's shirt sleeves is almost too violent for human endurance. Popular tradition has it that atmospheric humidity is the cause thereof. Now it is pretty well established that humanity is apt to be out of sorts when the humidity of the air exceeds eighty-five per cent. But if the tired feeling prevails when temperature and humidity are at ninety on one day, why should it not have the same effect on another day? And why should a day with temperature at eighty-three and humidity at seventy-nine be intolerable because of the lassitude it produces? Is it the presence of ozone, or the absence of ozone,—or of nitric acid,—or of chlorine,—or of atmospheric electricity,—or is it a subjective hallucination of the subconscious ego? I don't know, but I would like mighty well to find out.

A prominent official of the United States Weather Bureau declares that, because of the physical and mental exaltation resulting from it, the cold-wave is the most valuable asset of the United States. I have a lurking belief that he is right; if so, I wish I knew how he found it out. One thing about the cold-wave is a matter of great interest. The air of a cold-wave not only descends from a high latitude, but also from a high altitude. It is clean; it is dry; its electric potential is high. What does it bring that gives to all living things a blessed invigoration? I don't know, but I would like to find out.

Meteorological Laboratory.

Tonsillectomy During Rheumatic Fever.

Norris says the general tendency has been to refrain from operating on tonsils acutely inflamed, especially when they are associated with acute joint involvement. He deprecates this tendency and believes that there may be greater danger in deferring operation too late. If the tonsils are the source of infection, their continued presence increases the danger of secondary involvement of the heart. He believes that tonsillectomy is indicated as soon as the acute tonsillar inflammation subsides irrespective of the arthritic condition. He advises the use of salicylates in large doses to relieve the acute joint pains, before operating in order to increase the comfort of the patient.—(*Jour. Lab. and Clin. Med.*, n. 168, 1916.)

SPIRIT DRINKING A SYMPTOM OF PSYCHONEUROSIS.

T. D. Crothers, M. D.
Hartford, Conn.

It is a curious fact overlooked, that all the present reformatory efforts to drive out the saloon and break up the alcoholic evil, start from a delusive theory, viz.: that all use of spirits is a vice in moral evil, the product of a weak will and vicious impulses, which can be corrected by removing alcohol and arousing the moral and intellectual instincts of the person.

Conversion to this or that faith, signing the pledge, appealing to the manhood of the person, to his fears, to his pride, to his hopes for the present and future, are the means and measures that comprise an immense literature which has been unquestioned. The empirics, while boasting that it is a disease for which they have discovered specific remedies, fall back on these measures and consent to their use, as the most powerul adjuncts possible. All this is built up on theories that have come down from the past ages based on theological conceptions of life, and the present and future world. Personal experience and opinions of the victims themselves are made to sustain these theories. Facts that do not support these conclusions are put aside as unworthy of consideration. Conclusions of the fathers relating to all phases of the drink problem are accepted without question.

This delusion has received new vitality from the economic study of the subject. The spirit drinker is found to be a great obstacle in all circles of life, not only to himself, but to the damage he inflicts on others. Statistical studies of the causes of the evils which increase disease, shorten life, emperils human interests, sociologically and practically, point to spirit drinking as the most active cause. This creates an intense interest to support prohibition movements that will drive out the free sale of spirits. There are no question of causes here, other than the saloon and the free sale spirit. Hence the psychological wave of prohibition that is growing in every direction, and is almost certain to break up and destroy the manufacture and sale of spirits as a beverage.

There is another curious fact growing out of this movement that gives new force and power to the cause. The theories both ancient and modern, which have explained the action of alcohol on the human body, and been accepted without question, are found to be false. Exact studies in laboratories and clinical observation show that alcohol is not a tonic or stimulant in the sense of giving strength and power to human activities. Repeated tests and experiments prove that it is a narcotic and sedative in its action. Its fascination comes from the fact that it relieves pain, discomfort and misery by covering it up. This makes it most grateful and seductive to all classes. These conclusions have changed the former medicinal use of spirits, and revolutionized the theories of its action on the body. In addition to this it has indicated its destructive effects on cell and tissues. This has been confirmed by all modern pathological and statistical studies. This has also given a new vitality and energy to the reform movement, the workers in which most enthusiastically refer to this new evidence as proof of the magnitude of their work.

On the scientific side beginning with Dr. Rush of of Philadelphia was the organization of the first inebriate hospital at Binghamton, N. Y., in 1862, and the organization of the first medical society in 1870, which de-

clared that inebriety and alcoholism was a disease, and should be treated the same as any other. This society exists up to the present time, founded on the doctrine of disease and teaching its curability by physical and psychological measures, the same as in other afflictions. The bitter opposition this theory met in all centers has been overcome in medical circles. This was largely fostered by the Empiric efforts of irregulars, who claimed to have discovered remedies for its cure. The success in many instances of these efforts educated the public mind to realize the physical side of the malady and soften the asperity of reformers, who were bitterly opposed to curative measures that did not give prominence to the moral theories which they advocated.

In all this there has been no question or doubt raised concerning the ancient theories of why men drink. No one has stopped to consider anything more than the removal of alcohol and the stopping of its manufacture and sale. The most enthusiastic workers to bring this about assume that this is the cure, the remedy and the obliteration of what is called one of the greatest evils of modern times.

A third fact equally curious, which has not been mentioned, or noted in the voluminous literature of the present, is that the inebriate and alcoholic is not a chance product of circumstances and conditions. There is no accident or shifting circumstances that will explain its presence. He is the direct product of causes that move with the same uniformity, as any other forces in nature. There is an origin, development, maturity, decline and death, the same as in fevers, epidemic diseases and other ills which afflict human life. There are distinct causes here which move with unerring certainty, and the desire for spirit is only a symptom. While spirits may intensify the causes they remain and go on to their termination. Removal of spirits and concentration of all efforts in this direction bring about very little interest in the primary causes. It resembles elaborate treatment of fever, ignoring the bacillary causes. Assisting the disease to a fatal termination is great art, but how much greater the art and skill would be in eliminating the cause, destroying the typhoid fever bacilli and the mosquito carriers of yellow fever. Obviously the inebriate and alcoholic is born and bred, cultivated and developed with the same certainty as that of plants or animals. It is also obvious that all successful treatment must begin with study of the causes and apply preventive measures to check the disease at the beginning. Then there is scientific certainty and practical results.

The reform movement deserves the warmest commendation, although built on the most delusive theories, because it is forcing the danger on the public mind, and also is startling the physician with the fact, that there are causes back of these theories, of which he must be the student and investigator.

A research foundation has been etablished in Hartford, Conn., to make special study of the physical and psychical causes back of all use of alcohol and the saloon. It assumes that there is an unexplored territory here, which if occupied and studied would indicate sources of prevention and curability beyond all present conception.

A fourth curious fact like the others overlooked is that the historic literature and the most enthusiastic writers and experiences of reformers have a rich field of psychic facts, pointing out causes which are real and tangible to the scientists. All unconsciously this literature has outlined facts, and marked out lines of study which will be followed with the greatest of interest in the future. Evidently the enormous armies of drinking men and women in this country will require medical care and attention for years to come. They are largely of the incurable class, and belong to the degenerates and defectives, that will tax medical art and skill in treatment. There is another army growing up in all centers of so-called moderate or occasional drinkers, who are recruiting for the future with absolute certainly.

A research center that will make a study for the purpose of the counsel and advice to such persons will fill a want that is evident today. Men and women in all circles do not know how to escape from the dangers of spirit drinking. Institutions have no attractions for them, but a place for rational scientific advice would be most attractive. When prohibition comes and the saloon is abolished, what is to become of the armies of neurotics, degenerates and the host of others who have sought and found temporary relief in spirits! Here is a field that must be occupied by physicians and scientists, above all theory and prestige. This will call for the highest kind of medical skill and discernment.

THE COLOR OF ARTIFICIAL LIGHT AND ITS RELATION TO THE MEDICAL PROFESSION.

A. L. Powell
New York.

Artificial illuminants in most common use do not give a light equivalent to daylight in color value. They have a predominance of the longer wave lengths or red and yellow rays. From time immemorial we have been accustomed after the sun has set to have light of this general character—the campfire, the torch, the oil lamp, the candle, the gas flame and finally the incandescent lamp. Our sensibilities have grown to prefer the somewhat warmer hue of the unmodified illuminants for general illumination.

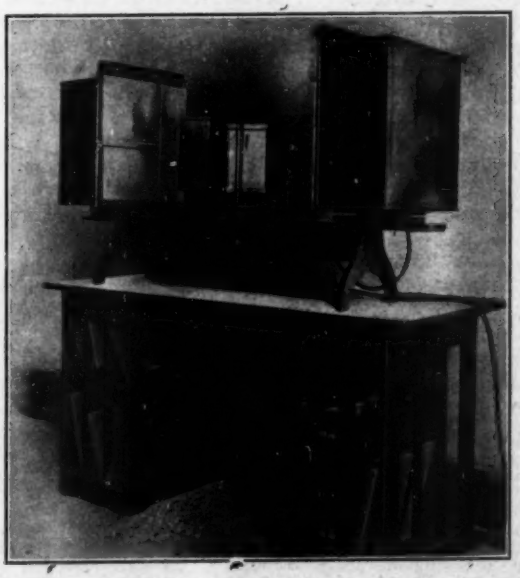

Figure 1.—Small standard x-ray examination outfit utilizing four lamps. Large equipments arranged similarly to sectional bookcases are available, some requiring as many as 48 lamps.

For certain purposes, however, there has been a logical demand for approximate sunlight color in artificial illuminants. This is due to the fact that we see

objects by light reflected from them to our eye. It the proper proportion of the various spectral colors is not present in the illuminant used, the object will present a different appearance than by daylight.

With each increase in efficiency of the incandescent lamp the filament was operated at a higher temperature and as a result the emitted light was nearer to white light. Finally with the high efficiency of the Mazda C lamp (gas filled tungsten filament) it became economically feasible to modify the light so that its spectral composition stimulates that of daylight. This is brought about by two means. As stated above, if we analize by means of a spectro-photometer, the light from the regular lamp, it is found to possess a preponderance of light in the red end of the spectrum with a relatively small proportion of light of the short wave lengths or colors at the blue end of the spectrum. If the filament is operated at a higher temperature, a larger amount of blue light is produced. Therefore, to have a lamp give approximate sunlight, it is first necessary to operate the filament at as high a temperature as is commensurate with reasonable life performance.

The other essential difference in the construction of the lamp designed to give approximate sunlight color is the special glass used for the bulb. We all know from a study of the properties of light transmission that generally like colors transmit or reflect like colors to a greater or less extent. If one holds a piece of pure blue glass before a pure red light, none would be transmitted. If this pure blue glass was put in front of a lamp giving all the colors in its spectrum, it would pick out or selectively transmit the blue light, absorbing the other colors. Another piece of glass which appeared blue, but was not strictly pure, would transmit all of the blue, a little of the green, yellow and red light. Glass of still another composition might transmit these various colors in entirely different proportions.

Since the Mazda C filament gives forth light of a definite color composition, if this light is filtered through a very carefully determined bluish glass, the resultant light will have a spectrum like that of sunlight. It is obvious that any blue glass selected at random will not do this. Careful tests were conducted in determining a glass of the proper chemical constituents to give the correct transmission of the various colors of light. To distinguish these new lamps from the regular clear bulb lamps they are known as Mazda C-2.

They are standard and are listed in sizes from 75 to 500 watts, or from about 60 candlepower to 550 candlepower.

It is not claimed that they give a light corresponding to north light in color value. They are not applicable for the most accurate color matching, such as is necessary in the dye house of the silk mill. For such purposes special units are available. Such special units, however, are not economical enough to warrant their use save for the lighting of comparatively small areas and are usually cumbersome and relatively expensive. The lamp in question has been designed to meet a much more extensive demand for light which is approximately correct as to color value.

This lamp finds particular application in the chemical laboratory, for most titrating tests depend on a change of color.

In microscopic work in which it is desirable to obtain a light as near daylight as practical for the examination of certain specimens; in dental work when a light which approaches daylight is necessary in color value to match artificial teeth with the natural ones, and for the detection of decayed spots and deceased conditions and in hospital and operating rooms.

This form of illumination is being used by several prominent ophthalmologists for retinal examinations. The filament of these lamps is confined to a relatively small volume, and this greater concentration of light source enables it to be placed more accurately at the focus of a reflector. One physician says that using his concave (parabolic) reflector sufficient concentration of beam is obtained to obviate the necessity for lenses.

Figure 2.—Night view of a specially constructed *x*-ray examination frame lighted by the indirect method using 150 watt lamps.

One of the first uses to which the lamps were put was for the examination of *x*-ray negatives. A suitable light for this purpose is most necessary, for after the plate is developed, it is necessary to inspect this very carefully to determine the ailment or discover the fracture. The negative is illumined from the rear by very diffuse light and experience has proven that the whiter the light the greater the ease of examination. Diffuseness to the light is obtained by using what is practically indirect illumination. The box or frame at the back is painted a flat or matt white. Lamps are concealed from view and equipped with reflectors to direct the light on this white background. From here it is diffusely reflected to an opalescent or ground glass plate which covers the opening or mouth of the box. Two views accompanying, show different types of *x*-ray examination boxes—one a very large specially constructed device for the examination of a large group of negatives; the other a smaller machine.

War Meeting of the American Public Health Ass'n.

A war meeting will be held in Washington, October 17-20, by the American Public Health Association. This will replace the annual meeting which was to be held at New Orleans, Dec. 4-7.

The papers and conferences will deal largely with the health problems created by the great war—the food supply, communicable diseases among soldiers, war and venereal disease, war and the health of the civil population, etc.

President Wilson has said: "It is not an army we must shape and train for war; it is a nation."

Go to the Washington meeting; then come back and do your bit!

Washington will be crowded and those interested are urged to reserve hotel accommodations at once. It will be easy to cancel reservations, but it may be impossible to obtain rooms at the last moment.

Preliminary programs may be obtained by writing to the American Public Health Association, 128 Massachusetts Avenue, Boston.

Five Minute Clinical Talks

GASTRO-INTESTINAL THERAPY.

GEORGE F. BUTLER, M.D.
MEDICAL DIRECTOR OF MUDLAVIA.
Kramer, Ind.

Intestinal Neuroses; Motor Neuroses.

The bromide of sodium, in gm. 2 to 3 (gr. xxx to xl) doses seems to be beneficial in these cases. If constipation exists, gm. 1 (15 grs.) of strontium bromide, in 4 cc. (dr. 1) of the milk of magnesia, with gm. 8 to 12 (dr. ii to iii) of liquid vaseline, at bedtime, gives good results. As the diarrhoea which is present is generally of nervous origin, the treatment should be directed to the nervous system.

Occasionally a combination of hyoscin hydrobromate, camphor monobromate and asafetida is useful. The external application of heat is also valuable.

Paralysis of the sphincter of a neurotic type can be treated by the Morton wave current or by a rapidly interrupted Faradic current broken into periods of from 20 to 30 seconds each. Strychnin and arsenic are of value.

Intestinal Neurasthenia.

Control of the general neurotic condition by the use of the bromides, valerian or asafetida is the first step in the treatment.

An intestinal tonic like strychnin is indicated and is of value. Fowler's solution may also be of assistance. This condition is undoubtedly due in many cases to an auto-intoxication, and for that reason the diet must be one light in meats and containing plenty of fruits, vegetables and cereals. To the above outlined treatment and daily colonic flushings these patients react very nicely.

Incontinence of the Pylorus; Insufficiency of the Pylorus.

The treatment of this condition depends on the cause. If due to a tumorous mass, involving the pylorus, an intestinal stenosis, or other pathological conditions, the treatment should be surgical in character depending upon the findings. If due to an atonic condition, or of neurotic origin, tonics at once suggest themselves, strychnine producing the best results. Intragastric faradization is of distinct value in these cases. For the neurasthenic condition the strychnin mentioned above, with the bromides of sodium or strontium for sedation, and the clearing up of the autointoxication, which is present in most all of these cases, are the procedures which must be followed.

The food must be solid and the patient must lie on the left side after eating.

Pneumotosis.

While the bromides of sodium or strontium are indicated and do afford considerable relief, it is not permanent in many cases, but they should be continued throughout the entire course of treatment.

I am not a believer in the use of opiates of any kind in these cases, as it is too dangerous a proceeding. Many attacks result from autointoxication, and in ridding the patient of this condition, the pneumotosis often disappears.

Colonic flushings, properly given, will cut short this condition almost at once. For the acute attack the passing of the stomach tube will cause the distention to disappear, and, according to Bassler, will test the patency of the cardia.

Medicinally, chloroform .03 to .06 cc. (5 to 10 drops) in water or a few drops of turpentine on a lump of sugar. Another combination which has a good effect is that of essence of peppermint and aromatic spirits of ammonia. To this may be added some camphorated tincture of opium if it seems absolutely necessary to use an opiate.

As these patients must be put on a vegetable, fruit and cereal diet, with only a small amount of meat and not many eggs, they require a tonic at first, and strychnin is of most value.

Merycism.

In many cases suggestion and observation of the patient is sufficient to obtain a cure. Insist upon the patient correcting the habit. Suggest to him how disgusting it is before others and call his attention to it every time the symptom is noticed.

A prescription of strychnin, camphor monobromate and asafetida serves the two-fold purpose of a sedative effect and the bitter and unpleasant taste that it gives in the mouth during the presence of food. If the patient does not control the habit, a liquid diet, which leaves the stomach quickly, should be given, with small particles of cracked ice after each feeding. If there is a subacidity we should give HCl in doses of from 2 to 4 cc. (3 ss to 3i). If hyperchlorhydria is present, it should be treated as I have described in my article on Hyperchlorhydria (MEDICAL TIMES, April, 1917).

The neurasthenic condition should be cared for by change of climate, or hydrotherapeutic measures supplemented with the bromides.

Hypermotility.

The principal indication is the control of the diet, as the stomach empties itself so rapidly that a semisolid or liquid diet is contraindicated. Solid food should be given, and especially those foods with a low caloric value. If there is marked hunger between meals, it may be necessary to give some light food to appease it.

The bromides in large doses give the best results medicinally.

If anemia is present, iron should be given. Change of scene and outdoor life are often all that is necessary to bring about a cure.

Lavage and electricity as a rule are not helpful. The bowels should be kept free, and for this liquid petroleum 8 to 12 cc. (3ii or 3iii) at bedtime is usually effective. If not, a glycerine suppository may be tried and last an enema, if necessary.

Pylorospasm.

Pylorospasm is rarely found as a true neurosis, but is more often secondary to a local condition. Consequently it is necessary in the secondary type to treat the disturbance which is causing it and not the pylorospasm proper. We must treat, for example, the gastric or duodenal ulcer which may be present, or the hyperchlorhydria, gastroptosis, or gall bladder disease.

For the typical neurotic type, during the attack, it may be necessary to use a hypodermic of morphin and atropin or codein. During the height of the attack, I generally use hot application over the abdomen before using the hypodermic. During the intervals of attack, I depend on the bromides in large doses with belladonna, three times daily. Galvanism, given intragastrically, and with a mild current, is of value.

When retention is present, it is necessary to lavage the stomach with a hot solution of sodium bicarbonate or other alkaline solutions.

The diet should be semisolid, or even liquid, for a while, and as non-protein as possible; broths and soups.

unless dilatation is an accompaniment, cereals, vegetables cooked to a pulp, a small amount of scraped beef and some stewed fruits.

Should it become necessary to resort to surgery, a pyloroplasty or pylorectomy gives the best results.

A CASE OF INJURY TO THE SPINAL CORD.

Impaction of Vertebrae; Partial Paraplegia; Operation; Recovery.

D. C. MAIN, M. D.
Alfred, N. Y.

Fractures and dislocations of the spine are rare, and the regions most liable to injury are the atlo-axial, the cervicodorsal and the dorsolumbar.

The causes of fracture are direct force (rarely) and indirect violence. Fractures from direct force may occur in any part of the column, and in this accident the posterior vertebral segments are driven together.

Fracture-dislocations from indirect force most commonly happen in the cervical and dorsal regions.

In the cervical region reduction can usually be accomplished, but in the lumbar region this is impossible.

Horsley says that in many cases paralysis passes away only to recur, said recurrence due to oedema of the cord.

Persistent paralysis may be due to laceration of the cord, clot of blood, compression of the cord by bone, or the products of inflammation.

My patient was a negro, 28 years of age, robust in appearance and free from luetic taint. While employed in loading logs on cars he accidentally fell from the top of the loading machine straight down, striking squarely on the soles of both feet on a heavy timber on the ground. He suffered greatly from pain in the lumbar region, down both legs, and in his feet. He was removed to a hospital in a nearby city, put to bed and packed close in one position with sand bags along his spine and legs.

Urinary incontinence was continuous and for the first three weeks he had paroxysms of pain in his legs whenever he attempted to move them.

He did not come under my observation until about three months after the accident, when the company by which he was employed called me in consultation with the attending surgeon. I was asked to make a neurological examination of the patient with a view to surgical intervention. I saw him daily for four days and decided from a careful study of his history, the condition of his reflexes, his incontinence (defecation was normal), etc., that he was suffering from an injury to the spinal cord. In view of the fact that at the junction of last dorsal and first lumbar vertebrae, there was a slight external ridge, very hard and bony-like and non-compressible, I concluded that in striking squarely on his feet he had sustained an impaction of the vertebrae. The spinous processes of the two bones in question were not so far apart as the processes above and below this point, and the external ridge did not run at the same elevation transversely across the backbone, but was more marked on the right than on the left, while the left end was about 1-8 of an inch lower than the right. When I first saw him he was emaciated, and seemed doomed to invalidism as a paralytic. He could not take a step or bear his weight standing.

On the strength of this examination the surgeon decided to operate. Under general anesthesia an incision four inches long was made at point named. On uncovering the bones no line of separation could be found. The two bones were virtually one long bone. The operator chiselled away the elevated ridge, enlarging the opening down to the cord in a funnel shape. On reaching the cord three small external clots were found and removed.

The edges of the bone were then smoothed up, wound closed and extension applied, without much hope of recovery, however.

Intervening treatment I know very little of, but imagine my surprise about a year after, in going through the woods near the logging camp, about fifteen miles from my Florida home, to find the man driving a team of mules.

He told me he had suffered no inconvenience from his accident since the operation and recovery, but was doing no heavy lifting.

In July, 1916, three years after the operation, he was still employed by the same company, in apparently as good physical condition as ever.

PERITONSILLAR ABSCESS.

HAROLD HAYS, M. D., F. A. C. S.
ASSISTANT SURGEON IN OTOLOGY, NEW YORK EYE AND EAR INFIRMARY: CLINICAL INSTRUCTOR IN OTO-LARYNGOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS.
New York.

Quinsy sore throat is so common a condition that one would hardly think it necessary to describe the symptoms, yet it is surprising to see how many times a mistaken diagnosis or a delayed diagnosis is made. Frequently the patient notes a "bursting" in the throat, whereupon the extreme distress is relieved—in other words the abscess bursts. After the patient has once had the taste of a quinsy, he can make the diagnosis, when a second attack occurs, before the physician arrives.

Peritonsillar abscess is essentially a supra tonsillar abscess. The infection *always* comes through an infected tonsillar crypt which empties or bursts through into this loose areolar tissue—when once an abscess starts in this region, as there is no outlet, the swelling distends the surrounding tissues until the pain becomes almost unbearable. This pain is not only in the throat but extends to the ear which on account of its lancinating character makes the patient feel that the abscess has extended to this organ. The swelling may become so large that the patient is hardly able to open his mouth.

Two pathognomonic signs of peritonsillar abscess are the inability of the patient to open his mouth and a peculiar nasal voice similar to that noted in paralysis of the soft palate.

The only way to prevent a recurrence of a peritonsillar abscess is to extirpate the tonsil.

The only immediate treatment is operative—incision and drainage of the abscess. On paper, this sounds simple, but I venture to state that a quinsy is not properly opened in one-half the cases.

Local anesthesia of the abscess is practically useless. The parts are so swollen that every application is painful and no application reaches underneath the surface. An administration of morphin a half hour before the incision will quiet the patient considerably. Under no circumstances should a general anesthetic be given. Numerous deaths have been reported. Although the main inflammation is in the pharynx such inflammation quickly spreads to the larynx. General anesthesia readily causes edema of the glottis—and death.

The incision of a peritonsillar abscess is a simple

matter provided the abscess is "pointing." However, one may be sure to strike the abscess cavity in almost every instance if he observe the following rule: Draw an imaginary line along the free edge of the anterior pillar and another line along the base of the uvula—where these two intersect is the site of election for opening the abscess.

The majority of physicians fear the hemorrhage which may follow the incison of a peritonsillar abscess, fear that they may puncture the carotid artery. In a search of the literature, I found not one single instance of fatal hemorrhage except where the abscess had eroded the wall of an aberrant vessel. Such an accident may have occurred from spontaneous rupture of the abscess.

For opening the abscess, the bistory or scalpel is most often used. Winding cotton to protect the knife-blade is useless and shows an uncertainty on the part of the operator. Opening a peritonsillar abscess is like opening an abscess anywhere else—when one passes through the hard, brawny tissue, the resistance to his knife-blade disappears. However, I never use a knife in these cases. The patient's moral and physical resistance are lowered and he fears the sharp instrument. I have had a peritonsillar incisor made—a long nasal dressing forceps whose blades are sharpened to a pin point. This is plunged into the abscess cavity and on withdrawal, the blades are widely separated so as to widen the incision. The relief after incision is instantaneous.

There is no particular after-treatment except to keep the mouth clean by frequent gargling. But the abscess may have to be opened a second or a third time, and one must remember that sooner or later the tonsillar tissue on that side must be removed if one wishes to avoid a recurrence.

11 West 81st Street.

The Diagnostic Laboratory

Conducted by CHESTER T. STONE, M. D.,
Brooklyn, N. Y.

A New Culture Medium for the Gonococcus.

Thomson recommends the following medium: (1) Prepare nutrient agar (2.5%) in the ordinary way with bouillon and Witte's peptone (1%) and render it + 6 acid. (2) Instead of adding to this 0.5% sodium chloride, as is usual, add all the salts natural to the human blood (as in Ringer's solution), namely, sodium chloride 9 grams, calcium chloride 0.25 grams, and potassium chloride 0.42 grams per liter. (3) Add glucose 2.5%. This addition in some manner renders the growth much more profuse. (4) The nutrient agar with salts and glucose is then tubed, about 4 cc. being added to each test tube. (5) The sterile tubed agar is melted in boiling water, and after allowing it to cool to about 50 degrees C., add 1 cc. of human plasma to each tube and mix thoroughly by rolling the tube between the palms. Allow the medium to solidify in a sloping position. For plating, the contents of three tubes may be added to a Petri dish.

To obtain human plasma the following method was employed: draw off three-quarters of a test tube, as for a Wassermann, of blood with sterile precautions. Have a sterile centrifugal tube ready containing 2 cc. of a 2% solution of sodium citrate. Fill this tube with the freshly drawn blood. Plug with a sterile cork (keep the corks in alcohol and burn off before plugging), and centrifugalize. When the corpuscles are driven down, draw off the supernatent plasma with a sterile 10 cc. pipette and add 1 cc. to each tube of agar as indicated above. If the test tube of blood is three-quarters full there is sufficient left for the Wassermann test after filling the centrifugal tube. It is immaterial whether the patient is being treated or not with arsenic or mercury. The growth is very profuse even after eighteen hours, and the emulsion obtained is white. When counting a vaccine, a culture not more than one day old should be used, since after this time many of the gonococci begin to autolyze, and the count would be too low.—(*Brit. Med. Jour.* June, 1917.)

Complement Fixation in Syphilis.

The patient's serum is used in the fresh, noninactivated state in quantities sufficient to insure the presence of sufficient syphilitic antibodies to bind complement when such antibodies are present at all; the complement is derived from the patient's serum and is accurately titrated; the ambocreptor is the serum of rabbits immunized against human red cells; the antigen is the acetone insoluble lipoids of Noguchi and Bronfenbrenner, while the corpuscles are thoroughly washed human erythrocytes from any convenient source, usually from one of the patients whose serum is being tested.—(*Am. Jour. of Syphilis,* July 17).

Simplified Technique for Detection of Amebas.

Ravaut says that if the amebas in the feces have any vitality left, they can be started up to move about by heating the slide as it lies on the microscope. The flame of a match or of a small tampon dipped in alcohol and held under the slide will answer the purpose, or with a dentist's heated rubber bulb a jet of hot air can be directed on the under side of the slide. The cysts can be shown up best by impregnating them with a mixture of 0.5 gm. iodin and 1 gm. potassium iodid in 50 gm. distilled water. If feces are treated with a 5% solution of liquor formaldehydi the cysts keep well for months. He puts 5 c. c. of this solution in a test tube with a lump of feces about the size of a pea. The tube is plugged with non-absorbent cotton, and it is shaken up until the contents are well mixed. They will keep then for months and the cysts will show up clearly. —(*Presse Medicale,* June 21, 1917).

Degeneration of Leucocytes in Urine Diagnostic Aid in Tuberculosis of Urinary Tract.

Wynne cites eleven cases of renal tuberculosis in ten of which tubercle bacilli were demonstrated. His tables include eleven cases of renal tuberculosis for which nephrectomy was performed, fifteen cases of nontuberculous pyuria in which the possibility of tuberculosis was definitely eliminated by operation or necropsy, and twenty cases in which there was no operation, but the clinical picture and the results of treatment rule out tuberculosis. He concludes that degenerated leucocytes in the urine are not pathognomonic of tuberculosis of the urinary tract, but a marked degeneration is strongly suggestive of this disease. The absence of degeneration does not eliminate tuberculosis. The cytologic study of the urine cannot replace the demonstration of tubercle bacilli or animal innoculation as a means of diagnosis; at best it offers presumptive evidence—(*Bull. Johns Hopkins,* August, 1917).

Skin Ink.

Finzi gives the following formula: acid pyrogallic, 1 gm.; acetone 10 c. c.; liquor ferri perchlor. fortior, 2 c. c.; spiritus vini meth. ad, 20 c. c. The solution is best kept in a bottle with a camel's hair brush attached to the cork. The mark is a brownish grey at first, but

after a few hours turns a brilliant black. It is unaffected by iodin, acetone, ether, soap, etc. It can be scrubbed with a nail brush and ether soap two days after it is made without being completely removed.—(*Arch. of Radiology & Electrotherapy*, July, 1917).

Polychrome Stain for Protozoa and Blood Corpuscles.

Watabilki describes a formula for differential staining purposes. The tints are no deeper than with the Giemsa but the different parts of the cell show up more plainly. The nucleus, the spirochaetes, flagella, and the chromatin of the malaria germ show up a reddish violet, while the bodies of trypanosomes, malaria germs, and the protoplasm of the leucocytes, and other cells are blue; the granules of eosinophils and pseudoeosinophils are red; the neutrophil granules pale bluish red; the basophil granules dark violet, almost black. Bacteria stain blue or black. The formula for the first solution is one part pure methylene blue; 10 parts absolute alcohol; 1 part sodium carbonate, and 90 parts distilled water. Dissolve the blue in the alcohol and the carbonate in the water and then mix and set aside 37° C. for two days. The second reagent is a solution of one part eosin in 200 parts distilled water (soluble eosin jauntre). Reagent No. 1 after filtering is slowly added to reagent No. 2 and the mixture incubated at 37° C. for 24 hours, to give it time to dry out. The resulting powder is ground in a mortar and methyl alcohol added in small amounts. The solution of the powder in the methyl alcohol is then filtered and glycerin added. It keeps a long time in a cool dark place. It is applied in ten parts distilled water, leaving it in contact with the specimen from ten to thirty minutes.—(*Arch. Exp. Med.*, April, 1917).

Albuminuria and Hematuria Following Administration of Hexamethylenamin.

Wiseman shows that the most important cause of albuminuria or hematuria following the administration of hexamethylenamin is abnormally high urinary acidity. In four out of five reported cases the acidity was above 100 in terms of decinormal sodium hydrate, and in one case it reached 140. It is therefore necessary to carefully determine the urinary acidity of all patients who are taking hexamethylenamin. If the acidity becomes too low or disappears entirely the drug is inefficient, whereas with a high degree of acidity, irritative symptoms are likely to appear. High dilution of the urine impairs the formaldehyde action; concentration of the urine increases formaldehyde activity, but favors unpleasant results.—(*Am. Jour Med. Sci.*, August, 1917).

Study of the Urines of Picric Acid Workers.

West shows that picric acid may be manufactured without great hazard to the employee, provided the work is carried on under proper conditions and the men are subjected to rigid medical supervision. Of 86 urines examined for the presence of albumin, three gave "the slightest possible trace" at the end of employment, whereas it was not detected at the outset. Nevertheless, these three men had never been affected by any of the substances they were handling; while many of the men not given the test had been repeatedly treated, one of this class having nearly died from the effects of fume poisoning. In addition for the tests for albumin, 57 of these urines were tested for the presence of picric acid, and three were positive.—(*Boston Med. & Surg. Jour.*, August, 1917).

Specific Action of Tin on the Staphylococcus.

Frouin gives the following observations in regard to the curative action of the salts of tin injected into animals innoculated with staphylococci. It is common knowledge in certain parts of the country that tinplaters never have furuncles. Addition of metallic tin to a culture medium on which mycoderma aceti is growing, does not check the proliferation of the microbe, but there is no further production of acetic acid. These and other experimental facts led him to use a mixture of metallic tin and tin oxide in treatment of staphylococcus infections, and he reports gratifying results even in old rebellious furunculitis. Recent experiences with war wounds infected with staphylococci have also shown encouraging results. The tin was taken internally and the wound dressed with a 5 or 10 per thousand solution of tin protochlorid in water with glycerin.—(*Presse Medicale*, July 12, 1917).

62 Pierrepont Street.

Food Administration.

The United States Food Administration announces the creation of an Advisory Committee on Public Health. This Committee has been created because the Food Administration, realizing that the nutrition of a people and the condition of its food supply bear intimate relations to the general problems of public health, sought the advice of experts in these lines. Dr. Welch has been named as Chairman of the Committee, the personnel of which is as follows: Leonard P. Ayer, Herman Biggs, David T. Edsall, Cary T. Grayson, A. Walter Hewlett, T. T. Janeway, F. G. Novy, Richard M. Pearce, William H. Welch, and H. Gideon Wells.

Dr. Ayer is permanently identified with the school hygiene movement. He has been director of the Department of Child Hygiene, Education, and Statistics of the Russell Sage Foundation during the past ten years; and is the author of books and articles on the educational and statistical phases of health work.

Dr. Biggs is a member of the Rockefeller Institute and an authority on public health and sanitation. As a representative of the Rockefeller Foundation, Dr. Biggs has recently completed a survey of the health condition of France, with particular reference to tuberculosis.

Dr. Edsall is Professor of Internal Medicine in Harvard University; he has in the past devoted much effort to the investigation of nutritional diseases and within recent years has become identified with research in the general domain of industrial diseases, which bear to nutritional diseases, both in the individual and society, a close relationship.

With the creation of a large army and navy, the public service has a natural relation to the work of food control, and to represent the interests of the armed services of our country, Admiral Cary T. Grayson has been placed upon the Advisory Committee.

Dr. Hewlett is Professor of Internal Medicine in Stanford University and is a recognized authority on the subject of diseases of the circulation and elimination.

Dr. Janeway is Professor of Internal Medicine in Johns Hopkins University; he is the author of books and articles on diseases of circulation and elimination.

Dr. Novy is Professor of Bacteriology in the University of Michigan and through years of active research over the broadest domains of his subject has established himself as an authority upon the subject of general sanitation.

Dr. Pearce is Director of the Department of Research Medicine in the University of Pennsylvania. Dr. Pearce has paid particular attention to the subject of national health and sanitation and has during the past two years, as a representative of the Rockefeller Foundation, completed surveys of the conditions of health and sanitation of Brazil and the Argentine Republic, at the requests of the governments of those countries.

Dr. Welch, Professor of Pathology in Johns Hopkins University, is scientifically and personally regarded universally as the dean of the American medical profession. There are a few departments of pathology to which Dr. Welch has not contributed in research; and there are no departments connected with public health upon which he had not impressed the influence of his wisdom and experience.

Dr. Wells is Director of the Sprague Memorial Institute of the University of Chicago, a research institution devoted to the investigation of diseases of constitutional type. Dr. Wells is the author of a very successful work on chemical pathology, the first of its kind in any language, and has contributed important research to many subdivisions of medical science.

It is believed that through the advice and co-operation of this

committee, representing specialized workers in the various correlated departments of medicine, the administration of food control will be enabled always to work for the best interests fo the health of the different classes in different sections of our country.

In addition Dr. Alonzo E. Taylor and Dr. Ray Lyman Wilbur, members of the Food Administration, will be ex-officio members of the Committee.

The Medical Reserve Officer of the Army.

When a physician is appointed to the Medical Reserve Corps as first lieutenant, he holds himself in readiness for orders. It is impossible for any one to say when the newly appointed officer will be called to the colors. In some instances orders have been received promptly and, in others, they have been delayed, depending entirely upon the exigencies of the service. As soon as a physician receives word that he has been accepted, he should obtain his uniform and field outfit, so that when orders reach him there need be no necessary delay in reporting.

Many officers have been ordered to one of the training camps for instruction and salary commences as soon as they report. These camps are located at Fort Oglethorpe, Ga., near Chattanooga, Tenn.; Fort Benjamin Harrison, near Indianapolis, and Fort Riley, Kans. The routine at Fort Benjamin Harrison is undoubtedly typical of that which exists in the other camps:

5.30—reveille, followed by setting up drill,
6.00—breakfast,
7.00—military drill,
8.30-9.30—lecture or conference,
9.30—drill,
11-12—conference,
12.00—dinner,
1.30-2.30—conference or lecture.
2.30-3.30—road march.

The remainder of the afternoon and the evening is spent in preparation for the next day's work and taps sound at 9.30.

The student officers at these camps wear the ordinary field uniforms of the army and show no designation of rank except when they go away from the camp. In this way every man is regarded as on the same footing. All the student officers are quartred in frame barracks, holding from forty to fifty men, and they eat together in various messes. The plan is to have these student officers take a three months' course. In some instances it has been found desirable to relieve men from duty at the camp to take up other lines of work. A great many have been sent to the Army Medical School at Washington for an intensive course of instruction. Others have been sent out on recruiting duty. Some have been sent to army posts and a few, who have not shown the aptitude required, have been relieved from active service and ordered to their homes.

As soon as the instructors consider the student officer is sufficiently well versed in military medicine and army matters to render intelligent service, he is ordered elsewhere for duty. The majority of these men who successfully complete their courses will eventually be sent overseas, so that practically all men who desire foreign service will be able to get it.

On the other hand, it must be borne in mind that there are many army posts in this country, Hawaii, Philippines, Alaska and Panama which must have medical officers, and most of these will come from the Reserve Corps. For example, all the medical officers at West Point, are from the Reserve.

Medical officers who are sent to garrisons receive the pay of their rank, which is $2,000 for a first lieutenant, $2,400 for a captain, and $3,000 for a major. In addition they are entitled to quarters. If quarters are not available, they are given commutation which permits them to engage suitable living places outside of the garrison. Quarters at posts are furnished with the heavier furniture, such as that used in dining room, living room and bedrooms, and also have heating apparatus and other material which would be hard to transport. In other words, the physician who goes from civil life into the army and is assigned to duty at a post will not find it necessary to move very much of his household belongings, as Uncle Sam has anticipated his wishes in that direction.

Another source of activity for the newly appointed Medical Reserve officers will be as examiners of recruits and as surgeons at the great cantonments which are being established. Many hundreds of thousands of men must be very carefully examined for the national army and this work very largely devolves upon Medical Reserve officers. Some physicians say they are quite willing to go into the army, but they do not want to do recruiting work. Every man should feel that he can serve his country in no better way than by the intelligent examination of recruits, because upon his examination depends the success or failure of the individual soldier. The War Department wants only men who are physically fit and it can only determine this matter of fitness by the comprehensive examination of an honest, painstaking physician. As long as the war lasts, the examination of recruits will continue to be a very important factor in the work of the medical department of the army, and hundreds of physicians will be detailed to that work. This can be done to a considerable extent by physicians who are too old to go into field service. The age limit at the present time is 55 years, but it is earnestly hoped that this limit will be extended to 64, which is the retiring age limit for regular medical officers of the army. There are thousands of medical men between the ages of 55 and 64 in the United States who could do most valiant service for the government in the examination of recruits and who would be delighted to have this opportunity of serving their country. They could not well go abroad or possibly stand the very hard life in the big base hospitals, but their services would be most valuable if given to the examination of prospective soldiers.

Sanitary inspection will be one of the most important duties of the medical officer, as the prevention of disease is even more important than the cure thereof. What the government expects of its army medical personnel may be seen in a bill introduced in the Senate defining the duties of the medical department of the army. The bill provides that these duties shall be the initiation and the direction of measures for the prevention of disease among troops and avoidance of sanitary errors in the location, construction, and management of posts and camps; the sanitary, medical, and surgical care of troops, the physical examination of all officers and enlisted men entering or leaving the army; the care of and accountability for all transportation pertaining to the movements of men and materials of the medical department and of the sick and injured of the army; and the preparation and preservation of the records of the transactions taking place as prescribed in the preceding. It also is prescribed that it shall be the duty of the senior medical officer of an army, corps, division, brigade, territorial division or department in which an outbreak of disease occurs to investigate at once and determine the reasons therefor.

It is not possible within the range of a short article to discuss the life of the medical man who will go overseas with troops. A certain number of Medical Reserve officers are employed as medical officers of transports which ply the Atlantic, but the bulk of the men will be used for active medical work in France or England. Younger men will be used at the front for duty in first aid stations, in evacuation hospitals and farther back in base hospitals. Undoubtedly, there will be convalescent hospitals in various places which must be served in part by Reserve officers. Indeed, there will be a great variety of labor for the American medical man abroad, and the only way for the physician going into the Reserve Corps to feel is to freely give himself over to the keeping of the Surgeon-General in the knowldge that his services will be utilized to the very best advantage of the government.

Some doctors who are practicing in villages and small cities feel that because they do not have the daily advantage of a hospital they are not competent to make application for the Medical Reserve Corps. This is far from the real facts in the case. Many of the so-called country doctors are very keen diagnosticians, have a wide knowledge of theraputics and treatment, and are surgeons of no mean ability. Men who practice in places where they are thrown upon their own resources must develop an immense amount of ingenuity and self-possession, because they have no specialists and no hospitals to turn to in hours of necessity. These are just the men who make good army surgeons, because the medical officer must be possessed of great presence of mind and must be able to do the right thing at the right time and do it quickly.

Surgeon-General Gorgas wants 25,000 medical officers, and he is still far from his goal. The medical profession in this country has never been tried and found wanting, and we cannot believe that the profession is any different today than it has been for generations past.

We believe every loyal American physician will so figure out his work that he will be able to join the colors and do his share toward the alleviation of the sufferings of those gallant young men who are going forth to battle.

Varicose aneurism should be dealt with, where possible, by the intrasaccular route. When the sac has been opened and cleared the wounds in the vessels should be carefully examined and dealt with on their merits. In the case of important vessels ligation of both artery and vein together should be avoided if possible, and when the continuity of one appears to depend on the sacrifice of the other the vein should be preserved rather than the artery, except in the case of the internal carotid and internal jugular vessels, where the former is the more important.—(*Pearson.*)

PERSONAL HISTORY OF APPLICANT FOR APPOINTMENT IN THE MEDICAL RESERVE CORPS, UNITED STATES ARMY.

Give your name *in full* (including your full middle name): .....

The date of your birth: ..... The place of your birth: .....

When and where were you naturalized (if of alien birth)? .....

Are you married or single? ..... Have you any children; if so, how many? .....

What is your height in inches? ..... Your weight, in pounds? .....

Give the nature and dates of all serious sicknesses and injuries which you have suffered: .....

.....

.....

.....

Do you labor under any mental or physical infirmity which could interfere with the efficient discharge by you of the duties of a medical officer? .....

If either parent, or brother, or sister has died, state cause and age in each case: .....

Do you use intoxicating liquors or narcotics; if so, to what extent? .....

Have you found your health or habits to interfere with your success in civil life? .....

What academy, high school, college, or university have you attended? State periods of attendance from year to year, and whether you were graduated; giving date or dates of graduation: .....

.....

.....

Name any other educational advantage you have had, such as private tuition, foreign travel, etc.: .....

.....

Give all literary or scientific degrees you have taken, if any, names of institutions granting them, and dates:

.....

With what ancient or modern languages or branches of science are you acquainted? .....

When did you begin the study of medicine, and under whose direction? His residence? .....

.....

How many courses of lectures have you attended? Names of colleges and dates: .....

.....

When and where were you graduated in medicine? .....

(Fill this out and send it to the Surgeon General, U. S. Army, Washington D. C.)

Have you been before a State Examining Board? If so, state when, where, and with what result: .....

.....

Have you had service in a hospital? If so, state where and in what capacity, giving inclusive dates of each kind of service: .....

What clinical experience have you had in dispensary or private practice? .....

.....

Have you paid particular attention to any specialty in medicine; if so, what branch? .....

What opportunities for instruction or practice in operative surgery have you had? .....

.....

Have you previously been an applicant for entry into the United States service? If so, state when, where, and with what result: .....

Are you a member of the organized militia? If so, state with what organization and in what capacity .....

.....

Have you been in the military or naval service of the United States? If so, give inclusive dates of service with each organization, designating it: .....

In case of war or threatened war, will you accept active service for duty with the Army, should your services be needed? ....

What occupation, if any, have you followed other than that of student or practitioner? .....

Present or temporary address:† .....

Permanent residence:† .....

I CERTIFY that to the best of my knowledge and belief the above statements are true.

Signature ☞ .....

Date, ..., 191

Subscribed and sworn to before me, this.....day of.....A. D. 191

[SEAL] .....

[Signature and official title.]

†The candidate should give his present address for correspondence, and also his permanent address to which he desires commission sent should he be appointed.

FORM 149
W. D. S. G. O.
(Revised March 6, 1912)

MEDICAL TIMES
July 1, 1917

.....*M. D.*

OF

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.....*191*

FURNISHES PERSONAL HISTORY

IN CONNECTION WITH

APPLICATION FOR APPOINTMENT

IN THE

MEDICAL RESERVE CORPS,
U.S. ARMY

.....*Inclosures*

The Medical Times

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NEW YORK, OCTOBER, 1917

"I Will Do My Duty, God Helping Me."

The desire of the surgeon-general of the army is for more surgeons and still for more. He has less than half the number he must send out to minister to the wants of the great armies now being trained. Practitioners from every part of the country have flocked to the colors until now about 10,000 have accepted, but 25,000 is the goal.

Our soldiers, to be properly cared for, demand the services of 25,000 surgeons. Lieut.-Col. Robert E. Noble, Medical Corps, the optimistic personnel officer of the surgeon-general, has an abiding faith in the members of his profession and says he is certain medical men will come forward as needed.

With that belief we are in hearty accord. Ours is a profession of sacrifice and humanity has yet to call upon the physician in vain.

We must bear in mind the fact that "eternal vigilance is the price of liberty," and those of us who intend entering the Medical Reserve Corps should not put off the day of applying for a commission. Now is the accepted time and no time is equal to the present.

Let no physician remain in the background because he is a specialist. Every specialist has his place in the Medical Reserve Corps. The gynecologist and obstetrician is a surgeon, and the pediatrician is an internist. The soldier has ever present need of the ophthalmologist, laryngologist, gastro-enterologist and urologist. The pathologist and laboratory worker are urgently needed in the great base hospital laboratories and the psychiatrist will find opportunity for his diagnostic skill behind the lines. In short the needs of the soldier population differ in no way from the civilian part of our people and medical specialists who treat one part are equally necessary for the other.

So let no man hesitate because he is a specialist, but let each remember that he has his part to play in this great conflict and that it is the united efforts of all that win victories.

Already has an American army surgeon been called upon to sacrifice his life for the cause of liberty. May the heroic death of Lieut. Fitzsimmons of Kansas City in the aeroplane bombardment of the Harvard hospital in France spur his confreres on to the preparation of themselves for the service of their country.

The blank on the preceding page, properly filled out, is the first step.

The Age of Conscripts.

We are in the habit of assuming that youth is the best time in the life of every man, the time in which nature does the most for him. We apply this belief in practice by conscripting the youth of the country for our army.

General Haig is quoted as saying, when an English editor commented on the extreme youth of the great bulk of the British army, "This is a war of youth. It takes youth to win. Why shouldn't a soldier be young? Would you choose men of forty to play in a championship football game? War is more strenuous than the fiercest football game."

In the face of all this belief and practice, Cattell urges that the age for conscription should be between thirty and forty rather than between twenty and thirty. There is much in what he says that is plausible. Certainly the poor physique of our youth has been revealed by the draft examinations, whatever may be the truth about the older men.

In the first place, Cattell argues that no scientific investigation has ever been made of the ages at which soldiers are most efficient or at which the men can be spared with the least loss to the nation. One cannot help thinking, as he considers this part of Cattell's argument, of the remarkable qualities displayed by many men in the present war who are much older than forty.

Along with physical fitness we must consider mental qualities. The young are less stable mentally, whereas the mental endurance of men of forty is superior.

A selection can be more exact with men in the thirties or forties than at an earlier age. The physically unfit have been eliminated largely or else stand out more obviously. The mentally unfit can be more easily detected.

The fact that a man has reached the age of forty and is found to be fit proves a special fitness for survival; proves that here we have an exceptional man who should make good military timber after proper training; or, assuming universal training, the man who reaches the age of forty in good condition and is a graduate of a national army should be ideal material for prolonged service.

Extreme youth may be all very well for violent exercise covering short periods, and it may withstand extreme fatigue under those circumstances better than forty, but aside from this there is not much to be said.

Smallpox, the plague, cholera and typhoid having been virtually conquered by science the most dangerous diseases are now venereal disease and tuberculosis. Cattell points out the greater liability to these diseases of the very young.

Coming to the economic argument, Cattell shows the fallacy of the contention that the loss to the nation is greater when older men are taken than when the very young are conscripted. In the case of the latter

the economic and social loss is only postponed. In fact he claims that the loss when a man in the twenties is killed, maimed or demoralized is far larger than at an older age. Ten years hence the young men now in the twenties must take the places of those now in the thirties, and what we save at present by taking the younger men we shall later lose with usury. In selecting the men of thirty and forty we could reserve those of demonstrated special fitness for other than military forms of national service, whereas now potential Darwins and Lincolns are ruthlessly exposed to annihilation along with mediocre boys.

Cattell holds that older bachelors and childless husbands should be drafted first, next those with children, and last those who have not had an opportunity to marry. He thinks the fact that men in the twenties have not had an opportunity to marry or to complete their families is one of the most urgent reasons for exempting them from the draft.

It is not cheaper, Cattell thinks, to let an unmarried man of twenty-five be killed rather than a man of thirty-five with children. On the contrary we lose the economic productivity of ten of the best years of a man's life, and while we save the expense of supporting children, we lose the wealth that they would have created a generation later. Governments would better support the children of married men of forty than jeopardize the lives of their very young men, for in the long run the conscription of older men would pay.

Cattell also makes the point that common human sympathy ought to give us pause. It is not fair play for the older men—politicians, traders and intellectuals—to take advantage of youth and the older men's power to turn our boys over to death and disease, with the best of life before them—love, children, performance, experience. If an army of conscripts must be had, it should be of men who have had a chance to live.

If this argument is sound our present policy is one which should make us do some unpleasant thinking.

One thing is certain; in proportion as the conscription age is raised wars become remote. Certainly the politicians and traders and intellectuals will never be drafted, which is only another way of saying that wars will never cease.

Our Disguised Homeopathy.

Whatever we may think of the homeopathic physician's claim that the dominant school of medicine is practising homeopathy when it resorts to the use of such products as the vaccines, and that the phenomena of anaphylaxis demonstrate the truth of the homeopathic principle that infinitesimally small doses of certain agents are potent in their physiological action, nevertheless it cannot be denied that doses that would once upon a time, not so long ago, have been considered absurdly small, are now commonly employed. It is probably our bigotry alone that prevents a frank admission of the essential soundness of fundamental homeopathic doctrine. We hug our scientific pedantry as determinedly as the German people cling to the Kaiser and Kaiserism.

When it comes to the numerous idiotic applications of homeopathic principles by ardent practitioners of that school, is it not easy to match every one of such applications in our own practice? One thinks of Beard's cancer cure, and the Woodbridge treatment of typhoid fever, and the Friedmann tuberculosis remedy. One thinks of the fool things that he has observed nearly all of his professional friends apply in their daily practice, in the field of therapeutics.

When this subject is discussed the parable of the beam and the mote ought to come into every fair man's mind.

Artistry and Alienation.

There is a significant phrase in one of John Synge's books. Speaking of the spirituality and wildness of the peasants of the west of Ireland, he remarks: "There is an affinity between the moods of those people and the moods of varying rapture and dismay that are frequent in artists and in certain forms of alienation." These peasants, descendants of the ancient bards that were chased to the West, are said to be born poets. Synge noted in them the quick changes from gloominess to gayety, and saw the relation of these changes, and the Celtic dreaminess, to the genius that has shown itself among these people. Especially acute was his realization that such traits bear some relation to manic-depressive insanity, though he did not understand that the genius is not insane but specially predisposed to insanity because of his delicately organized nervous system. When the genius becomes clinically insane he ceases, perforce, to be a creative artist. All the confusion about genius and insanity is unnecessary if these simple facts be kept in mind.

Fine Distinction by Judge Lynch.

The medico-legal records of the Society for the Prevention of Cruelty to Children furnish enlightening reading for those who are a little confused about lynching and other forms of murder practised so freely upon black-skinned members of our democracy. We have been told by residents of the districts in which these joyous parties are so frequently held that if we ourselves were on the ground we should be strongly impelled to join in the butchery.

But the reading of the aforesaid records convinces us that we should not be strongly drawn to participation in such crimes were we on the ground. The lynchings and burnings and shootings cannot be a mere matter of the emotions, for no crime committed by a negro marked for lynching ever exceeded in heinousness and bestiality the offences against children that very frequently come within the purview of the Society for the Prevention of Cruelty to Children. Yet we have never heard of any offender against our youth being torn from the hands of the law and strung up to a lamp-post, or burned, or shot.

Race prejudice must rule in these frightful affairs, for the offenders against children are white men in overwhelming ratio.

It is to be presumed that crimes against children, committed by white men, must be, relatively, as common in the lynching districts as in New York. Yet how many instances could be cited of the seizing of white offenders by infuriated mobs in the lynching districts?

What is it about the raping of a five or ten-year old girl by a white man that differentiates it so nicely, in regard to the character of the penalty and the degree of resentful passion aroused by such a crime, from the attacks made by negroes upon their adult female victims?

Why this relative safety of the white man, in New York and also in the lynching districts, when he violates a child?

If the whole question revolves around race prejudice, what a vicious thing race prejudice is, for if the white man who has raped an infant should not be lynched, why should a negro who has assaulted a woman be strung up? What in the name of heaven has color to do with such things?

Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

A Boarding-House Melodrama

In Two Acts.

Place: Philadelphia.

Time: September, 1908.

SYNOPSIS OF THE PLAY.

ACT I.

The individual, Miss X., was twenty-four years old, born in Philadelphia, but the family history could not be obtained. Until a few months before the accompanying photographs were made, she had been reared as a woman, had menstruated regularly and in both dress and manner of life and appearance in evening costume was generally regarded as a young woman of rather prepossessing appearance. There was no growth of hair upon the face or elsewhere upon the body, save in the pubic and axillary regions.

At this time she was living in a boarding house in Philadelphia where there were a number of boarders, by whom it was never suspected that there was any question of her true sex. Among the other guests in this house was a man of fifty and his daughter of eighteen years of age. The man became enamored of Miss X and, overcoming her scruples, they lived together as man and wife in a surreptitious manner. She became pregnant and was ultimately delivered of a child. The exact duration of the pregnancy cannot now be ascertained.

ACT II.

In the meantime, the daughter of the man became a close friend of X, and they frequently shared each other's apartments. The masculine side of the patient became apparent, for X became enamored of the daughter, overcame her scruples and they, when occasion offered, lived together as man and wife. The daughter, too, became pregnant and so, in turn, was delivered of a child.

The development of the two pregnancies occurring in supposedly virtuous women led to a considerable scandal in the boarding house, and the three took their departure as soon as the facts were actually known.

Curtain.

It's the Fortunate Way He Says Things That Is Unfortunate.

"If I send a patient to the office of a heart specialist, and if the patient returns without heart disease, it is because the doctor was not in."

" . . . doctors and educated people . . "

"The public will lose that confidence in doctors which it should not have had in the first place . . . "

—Robert T. Morris, M. D.

The doctor's whimsical sayings of the foregoing order will be found, upon analysis, to strike pretty deep and to reveal much truth.

What he has to say about the heart doctor means a great deal. You don't hear much about the discovery of normal hearts. The heart men seem to find something wrong nearly always.

We wonder what proportion of hearts are found normal by the cardiac clinician?

We have two friends who are visiting physicians to a large hospital. They are both very strong on heart work. The writer has read a great many of the histories of their patients, and always encounters something about the heart that is wrong. If there is nothing else but slight muffling to mention that is mentioned. Sometimes we fancy that there is something abnormal about the ears of our friends. Very often what they call muffled sounds are clear enough to us.

"Doctors and educated people." We happen to know that the communication in which this subtle differentiation appeared, when submitted to a certain journal, was rejected because of the supposed flippancy of the remark. The MEDICAL TIMES published it without any silly balking. It could be taken in a complimentary sense (perhaps this will annoy the educated people).

"The public will lose that confidence in doctors which it should not have had in the first place . . . "

How can this be extenuated? The doctor is only saying in this connection that doctors are not philologists. That's his way of stating an obvious truth.

A paradox seems to present itself. If you write anything immoral or untruthful you have difficulty in getting it published. If you write anything moral or truthful you have difficulty in getting it published.

Progress or Retrogression?

As the training and increased capacity of women progress under the spur of feminism, and as women become prepared to replace men now holding industrial, municipal, State and Federal Government positions, the release of men for war will be proportionately facilitated.

Just at present this trend seems rational enough, but are there not sinister possibilities in it?

If women reach a point of development where they are equipped to carry on the affairs of the nations, what is to prevent the waging of perpetual war?

The highly civilized man may be averse to war, but it was once the natural profession of the male sex. There are fascinations about war that the strife-tired peoples at home do not sense.

In Bernard Shaw's "O'Flaherty V. C." the following lines occur:

O'Flaherty. Some likes war's alarums; and some likes home life. I've tried both, sir; and I'm all for war's alarums now.

General Sir Pearce Madigan. Strictly between ourselves, O'Flaherty, and as one soldier to another (O'Flaherty salutes, but without stiffening), do you think we should have got an army without conscription if domestic life had been as happy as people say it is?

O'Flaherty. Well, between you and me and the wall, Sir Pearce, I think the less we say about that until the war's over the better.

He winks at the General. The General strikes a match. A thrush sings. A jay laughs. The conversation drops.

Sometimes it seems as though we were intensively preparing for the ready release of our men for long periods, and this could be only for war.

The obvious bellicosity of many women, under the guise of patriotism, is something to think about.

On the one hand we have the feminist movement, aiming at the pre-emption of men's places in civil life, and on the other hand we have men meeting the primitive call more than half way—going back to their old and natural selves with joy at their release.

Sometimes we are inclined to think that James Bryce's argument that other than material progress has ceased in human society is sound.

The medical profession has a right to concern itself about these matters for reasons that are painfully obvious. What is happening to medical science through long years of war, with their demands upon such large numbers of the best men in the profession, requires no elucidation.

The American Association of Clinical Research

JAMES KRAUSS, M. D., Permanent Secretary and Editor.

THE EFFECTS OF THE WAR AND CLINICAL RESEARCH.

JAMES KRAUSS, M.D., F.A.C.S.
Boston.

This world war, with its conflicts on the ground, in the air, in the trenches, on the seas and under the surface of the seas, furnishes medical material in such numbers as Louis, the father of medical statistics, could never have hoped to obtain for his numerical method of clinical research.

The effects of the war are manifested not only in those massacred, shocked, maimed, crippled and disabled on the actual fields of battle by bullet and shell, grenade and shrapnel, fire and gas, steel and water, climate, wind and weather, cold and heat, fatigue, hunger and dissipation. The effects are no less disastrous in those that remain behind at the fireside in factory, on the farm. Want has led to starvation, and starvation and cold and fatigue have led to disease. Promiscuity has led to infection and illegitimacy.

Engel (Tageblatt, Berlin) gives the figure of three millions of illegitimate children born in Germany alone.

Thibierge (Gaudy, *Archives Medicales Belges,* June 1917,) gives 150,000 to 200,000 new syphilitics in the French army alone.

Biggs, sent by the Rockefeller Foundation to France, found that the prevalence of tuberculosis there presents one of the most serious problems. It has been stated that there are two million tuberculous soldiers in France alone. Tuberculosis is rampant in Germany and Austria. Exposure to the various hardships incidental to war has brought millions with latent tuberculosis to death's door, tuberculosis is flaring up into deadly activity as powder puffs to the light of a match.

The tremendous shocks of modern artillery fire have disorganized the nervous systems of millions. The infliction of wounds, fractures, dislocations has been a matter of course.

Not to extend this picture of events even to its legitimate lengths, but one fact more will be pointed to. Climate, wind and weather, want and neglect and ignorance, misdirection and waste of human energy, indulgence in proferred and seduced amities have produced in our own land enormous masses of undeveloped, poorly developed, and actually diseased individuals. The recent examinations for our army under the select draft have disclosed one-third of the citizen population between 21 and 31 as physically unfit for military service.

There is nothing in military medicine and surgery that does not belong to civil medicine and surgery. There is nothing in the arrangement of hospitals, bases and units, in the field, nothing in the treatment of the wounded and diseased in action, that is different from hospitals and treatments given in civil life; nothing in the methods of sanitation practised in military life respecting food, water, conservation of life and energy, personal habits and the prevention of diseases that is not vital in civil sanitation: except the fact that overwhelming masses of men are collected in certain limited areas and consequently the administration of therapeutic and sanitary measures when needed must be inordinately rapid. Military medicine and surgery and sanitation, in this war as in any other war, are emergency medicine and surgery and sanitation en masse.

In emergencies, it is hardly possible to make observations and inferences of lasting consequential importance, and what is observed with even penetrating perception in one emergency is not necessarily to be taken as a safe guide for a subsequent emergency. Bergmann, in the Russian-Turkish war of 1876, selected fifteen of the severest injuries of the knee joint, gunshot wounds with open knee joints and extensive bone destruction. He disinfected the skin surrounding the gunshot wounds, bandaged the extremities with salicylate gauze and immobilized them with plaster of Paris dressing. All the wounds headed with the exception of one, although the wounded had to be transported for days in pouring rain and over soft roads through the steppes, while 95% of the knee joint gunshot wounds treated by immediate probing and subsequent bandaging were fatal (Schimmelbusch, *Aseptische Wundbehandlung,* 1893). In the present par, owing to prevalent infection of the wounds, Makins of the British service (*British Medical Journal,* June 16, 1917) insists that a gunshot wound of a joint cannot be dealt with too early, that "the experience gained in recent previous wars, regarding the treatment of wounds of joints has proved of small avail in the present campaign because it was obtained almost entirely from observation of the lesions produced by rifle bullets, which had proved themselves of minor gravity and capable of healing spontaneously with good results when subjected to simple treatment founded on the sovereign principle of rest." Fractured and crushed limbs that used to be amputated to save life or resected to secure usable ankylosis, Depage (Gayet, *Lyon Chirurgical,* March-April, 1917) treats by thorough opening of every crevice to realize asepsis and by subsequent suture, and bone and skin graft where necessary, to make men in a short time able to return to the front. This, whether dictated by military necessity or surgical initiative, is the aim throughout all the warring armies. Free access to the wound is the striking feature of wound treatment in this war, reverting to the preantiseptic era of Kern, who introduced the open treatment of wounds into surgical practice. Free access to the wound is the present treatment in Austria and Germany, as reported from services of Rydigier, Braun, Loercher, Walzel, &c.; and in France and England, as reported from services of Carrel, Depage, Makins, &c. The infected wounds are immobilized, bits of clothing and foreign matter are removed, the wounds are opened, drained, flushed or not flushed, dressed or not dressed with hot solutions, antiseptic, antitryptic, bactericidal, indifferent.

The most important of the newer solutions brought into notice in this war are the neutral solution of chlorinated soda made by Dakin and first employed by Carrel, the solution of acetate of aluminum as an alternate solution reported by Eastman to be in use in the Austrian service, the dyestuff product of flavin or trypaflavin used in the London Middlesex Hospital by Browning and Bland-Sutton, the hypertonic salt solution suggested by Wright. Of these, flavin is given as destroying microorganisms without injuring tissue, a triumph of the dyestuff chemistry of Ehrlich; but by far the largest notice has been given to the Dakin

*Read before the ninth annual meeting of the American Association of Clinical Research, in Boston, on September 15, 1917.

solution of chlorinated soda and its employment by Carrel with his drop method. Rubber tubes are inserted to the bottom of the wounds or carried entirely along the whole length of the wounds, and the solution is allowed to flow into, along, and through the wounds drop by drop, the whole being a complicated Murphy drip applied along the time-honored Listerian method of treating septic wounds with hot, moist, antiseptic dressings.

Some attribute the success obtained by the Carrel-Dakin disinfection to the solution, some to the mechanical features which bring the solution in direct contact with the infected parts. Some deny that the Carrel-Dakin drop method enters beyond the superficial regions of the infection; thus leaving deeper infections unexposed and untreated; others are full of enthusiasm over the unbounded control of the infection and consequent preservation of limbs that this method apparently provides in large numbers of instances. Pearson gives in the Lancet (*Internation Abstract of Surgery,* September 1917, p. 243) adequate drainage as "the one absolute essential to good results. Those," he says, "who pin their faith to antiseptics such as the hypochlorites, by means of which they believe they can diminish or destroy the organisms in situ admit that their drainage is faulty and ineffective in that they are unable to obtain satisfactory results by drainage alone. The large number of antiseptics in vogue is in itself evidence of the limitations of this treatment." ". . . while . . . sepsis cannot be adequately dealt with by antiseptics or concentrated salines if unsupported by drainage . . . wound infection can be thoroughly and efficiently controlled by mechanical drainage alone. . . The chief factors governing the efficacy of drainage are free incision and loose drainage, counter incision for gravity drainage, and capillary drainage secured by light packs to all parts of a wound and exposure to air to allow for evaporation. Drainage tubes should be used where dead space cannot be obviated by gauze packing or where dead tissue is present which it is inadvisable to remove. Large quantities of fluids by mouth also tend to promote free discharge." Taylor, of the Goelet Research Laboratory (*Journal American Medical Association,* August 4, 1917) considers the treatment of infection of wounds still in the experimental stage, in the sense that, first, one thing is tried, then, another thing, without stopping long enough and taking full care to ascertain what a method or technique will or can accomplish. It is of "little use", he says, "to compare two methods of treatment conducted by different men," or "to compare results of one method of treatment conducted in a series of cases with a different method used by the same surgeon in a previous series," and urges for standardization, "groups of selected cases" or "large groups of unselected cases" and, as the most satisfactory system of comparison, one which eliminates the largest number of variable factors, the "treatment of two or more wounds in the same individual by different methods."

This brings us to the consideration of the conjoined method of clinical research, the method for the establishment and propagation of which this American Association of Clinical Research has been founded and the only method in existence which vies with the numerical method of Louis for conclusive investigations of the science and art of medicine. The object of the American Association of Clinical Research is to ascertain the exact scientific status of medicine and surgery as practised at the present time, to obtain the data conjointly, examine them correctly, correlate them comprehensively, in order to ensure, advance and disseminate the knowledge of accurate pathology and therapeutics for the scientific practise of medicine and surgery.

The statistical method of Louis (1787-1872 A. D.) has the advantage only of age and of extensive trial; but a hundred years are of no great moment in the building of the science of medicine and extensive trials are of less moment if they fail to produce the results for which they were made. Numbers are not sufficient clinical evidence of truth. Truth is bound to other factors than mere numbers. The numerical method presupposes uniformity of clinical conditions, when every true physician knows that there is no such clinical uniformity in existence. A large portion of the facts of pathology and therapeutics cannot be estimated or even represented by the numerical method. Tabular statements can give in numbers the results of routine treatments, but cannot give the circumstances which may constitute the essential differences between cases under treatment, the constantly varying circumstances that favor, forbid or limit certain treatments. When we consider cases not in terms of number, but as we sometimes do and always should consider them, in terms of quality and relativity as well as of quantity, the method of Louis fails entirely. Numbers can be made to prove almost anything and, therefore, most often prove nothing.

The conjoined method of clinical research fell to my lot to present it to the profession in the year 1906 (*New England Medical Gazette,* March, 1907) and to make it the basis for the foundation of the American Association of Clinical Research in 1909, to distinguish between clinical research work as it should be done and the clinical work that is being done all over the world, a work that is very often good but quite as often, as everybody that knows must admit, indifferent and sometimes even bad. To arrive at adequate inductions, the conjoined method of clinical research is based upon the art of observation introduced into medicine by Hippocrates and practiced by the profession in varying degrees of exhaustiveness, prodded to it from time to time by men like Prosper Alpino, the father of modern semeiology; like Thomas Sydenham, the English Hippocrates; like Samuel Hahnemann, the German physician; Auenbrugger and Laennec, Virchow and Helmholtz and Garcia, Nitze and Roentgen, men who have taught us to extend our observations even into the recesses of the human body, into the cavities and through its tissues, until we may say that there is hardly a solid spot, or a fluid drop, or a gaseous vapor belonging to the human body that cannot be brought into the field of our observations. To provide against faulty observations and faulty reasoning, observation, whether simple or experimental, analytic or synthetic, is practised conjointly. This avoids incorrectness as well as incompleteness, and what is equally as, if not more, important, fixes for all subsequent time, by record, all the variable and constantly varying elements of clinical pictures which, if lost, may never be completely reproduced even by subsequent observations. The conjoined method is an immediate, continuous, step-by-step observation and verification of clinical elements. Two competent men, preferably of opposite tendencies, make observations simultaneously of each case to be observed and record their observations independently of each other and as exactly as possible. The observations should disclose the subjective symptoms and the objective signs of the disease through-

out its entire course to its termination; the methods of examination, physical, chemical, histological, bacteriological; the diagnostic conclusion; the treatment in its complete aspect as instituted in one case by one observer and in the succeeding case by the other observer; the immediate and final result; and, in case of death, the macroscopic and microscopic post-mortem appearances.

No doubt the fear of cumbersomeness and of the amount of work entailed has delayed the more extensive use of this method, but the method can satisfy all scientific demands: It can produce correct clinical evidence by simultaneous independent observation of facts or series of facts freed from prejudice because of the knowledge that they are to be viewed for scientific control, comparison and verification, and freed from error involved in haste, fertility of imagination and speculation, because of the knowledge that the observations are to be of abiding scientific value and are to form the basis for accurate inductions: The correct evidence produced is sufficient to be conclusive inasmuch as, of necessity, it can lead to just one true generalization and, at the same time, manifest the truth of that generalization. The reason why numerous instances have been required to justify generalization is because it is well known that particular observations are not necessarily exact and correct observations, and it is presumed that inexactness and incorrectness can be overcome by a mass of observations of similar conditions. If we are assured of exact and correct observations, a reasonable number of such observations will suffice for a correct generalization when hundreds of inexact and incorrect observations will fail to produce a correct generalization. Some of the most reliable general facts of nature have been drawn from comparatively few particular facts, but these particular facts have been observed in an accurate and comprehensive manner. It is a mistake to think that the clinic requires an inordinately large number of facts before it may justifiably infer a general fact. The clinic has not prospered overmuch under the aegis of empirical case hunters. Look at the reports of cases. How few give the facts so that they strike fire! How few give the minute facts and, when giving them, how few give the necessary discriminating facts which make minuteness exact and comprehensive! How few give the truly relevant facts! How few give all the facts!

This discrepancy is felt not only by members of this association. Other men and other associations have the same feeling. The necessity for conjoined effort is felt everywhere. The American College of Surgeons feels the necessity for standardizing surgery. The present president of the American Medical Association feels the need of the judgment of a commission of experts for the performance of major surgical operations. The conjoined method of clinical research is the only method in existence that can scientifically standardize the work of both medicine and surgery: It can furnish both correct and sufficient clinical evidence: Correctness being assured by observations corroborated by independent observation: Sufficiency being assured by comprehensive observations, i. e., observations that are exact, discriminating and minute as to all natural circumstances.

This war will leave its enormous legacy for the observation, examination, analysis, experiment, correlation, synthesis of conjoined clinical research. The treatment of wound infection is the treatment of all infection, medical as well as surgical. All infections enter through the portal of a wound, the primary focus. Secondary and tertiary foci are disseminated from the primary focus. The war may extend the necessity for compulsory or sanitary inspection of the population, not so much for segregation as for discovery and treatment of disease, adjustment and conservation of the factors of health in the young as well as in the old, in the child as well as in the parent, in the parent in posse as well as in the parent in esse. Thus there may come a mass knowledge of hereditary influences and of environment bearing upon disease and the treatment of disease by both medicine and surgery. The knowledge of the most favorable age for entering school to develop the child physiologically both in mind and in body may extend to the knowledge of the most favorable age for entering upon occupations to develop men and women both in mind and body forward, not backward. Health, the primary aim in early education, may, at last, become the aim of life throughout, for communities as well as individuals, for nations as well as states. The unfit are not to be eliminated but to be made fit. The cripples are already re-educated for usefulness. Efficiency and success may no longer be what the superficial current makes them. Actual power for the great problems of life and work is needed. The war will provide ample data for knowledge and adaptation to occupation, health, disease, ample data for all the truths of medicine and surgery. It is for us to utilize the data, to gather them, weigh them, and arrange them, without bias, minutely, accurately, comprehensively, that we may derive from them the fixed related scientific principles for the scientific practice of medicine and surgery.

419 Boylston Street.

The American-Medico-Pharmaceutical League.

A regular monthly meeting of the executive committee of this association was held Sept. 24, 1917.

After the election of new members, Dr. Brothers, the corresponding secretary, announced that one thousand and eighty-three new members had been elected during the past fifty months.

It was decided to hold the next meeting of the executive committee on Monday evening, October 22.

After reminding the members that the twenty-first annual convention of this national association would occur at the Hotel Astor, New York, May 27, 1918, it was decided to discuss questions of interest, suggested by the members of this medical association.

Members were informed that although no individual notices were sent out, they were privileged to attend any meeting on the evening of the fourth Monday of each month.

Subjects suggested by the following members were discussed:

Adolphus G. Meyersburg, "Against Birth Limitation." Dr. Jacob Krieger, "The Medical Foe—How to Improve It." John H. Finney, D. D. S., "Pyorrhoea Caused by Deposit of Calculi Around the Necks of the Teeth." Reginald H. Sanderson, D. D. S., "Riggs' Pyorrhoea Alveolaris and the Treatment of Abscesses in Their Relation to Systemic Disturbances." Dr. Sanderson employs an electric vacuum cup. William Mueller, Ph. G., "The College Course Should Be Increased to a Ten Years' Term." William Buderus, Ph. G., "Pharmaceutical Societies Should Devote More Time to the Discussion of Practical Matters, and Less to 'Refreshing the Memory.'" William Knoop, Ph. G., "Our Committees Should Wake Up and Call More Meetings." Abr. J. Kramer, Ph. G., "War and High Prices." Sol Groisser, Ph. G., "The Alcohol License." Nathan Belchikott, Ph. G., "The Closing Hour."

A protest was entered against libellous attacks and insinuations of association leaders, such as that our medical association does not initiate members, that our active labors are insufficient, that reports are not published, etc. It was claimed that the reason why these leaders deceived the rank and file in this way, and failed to affiliate with our medical association —which has grown to be one of the most important in existence (not a "paper" association, but one with a solid, paid-up membership behind it) was because leaders of the American Medico-Pharmaceutical League were too honest to tolerate certain practices, and were likely to enlighten the profession.

War Medicine and Surgery

BAYONET WOUND OF BUTTOCK; LUNG PUNCTURED; SURGICAL EMPHYSEMA.

Capt. John D. Hayward, R. A. M. C., reports the following case recently admitted to a hospital in France. The result of the injury presents points of anatomical. surgical and medical interest.

Private W. H. was admitted on April 17, 1917. He complained of no pain or inconvenience, but had been sent down from a field ambulance on account of an accidental bayonet wound.

History.—In the early morning of April 14, 1917. this soldier was about to leave a dark dug-out to muster for an attack. He was stepping down backwards from a ledge when he ran his right buttock on to the bayonet fixed to a rifle leaning against a cross-beam. He felt no pain until the falling rifle pulled the bayonet out of the wound, and even then there was little suffering, and he hobbled off to report himself and was directed to the field ambulance. He describes the bayonet as entering some 8 inches.

Present state.—There is a small nearly healed skin wound at the upper and outer surface of the right buttock; it is not larger than a florin, and if a line be drawn from the anterior superior spine of the ilium to the top of the great trochanter the scar is situated two-thirds of the way down this line and about two inches behind it. There is no pain or tenderness about the wound or anywhere else. There has been no hæmoptysis, cough, or dyspnea, no pain on deep inspiration. Neither by examination in the ordinary manner nor under the *x*-ray can fluid or air be detected in the pleural cavity, and there are no abnormal abdominal symptoms.

From the site of the wound up the right side and over the right thorax, back and front, there is marked surgical emphysema extending up to the clavicle in front and into the axilla at the side. This emphysema was plainly visible to the eye. On the *x*-ray screen and on a photographic plate it showed as a band ½ to 1 inch in width, light-colored on the screen, dark on the plate, between the skin and the muscles.

In the erect position there appears such a distance from the gluteal region to the thorax that it was difficult to believe that an injury to the former—so trifling, apparently, that the sufferer hardly noticed its occurrence—could implicate the cavity of the latter. No other conclusion, however, was possible, and Lieut.-Col. Nathan Raw demonstrated on the cadaver that a knife 8½ inches long could be pushed up from the position in the buttock. up in the muscles behind the peritoneum to pierce the diaphragm and prick the lung. In the bent crouching position, in which the patient was wounded, a couple of inches less would no doubt suffice. It is obvious how a small change of direction would endanger important blood-vessels and the abdominal contents; no doubt the bayonet was directed by the ilium in the path of less danger. The absence of symptoms and of physical signs was remarkable; indeed, but for the emphysema the injury would have appeared a trifle.

In a few days most of the subcutaneous air disappeared, but for some time a band—highly resonant to percussion and the width of the axilla—extended from the apex of the axilla down to the scar of the wound, presenting the characteristic cracking sensation to palpation, and giving a cracked-pot note in the lower axilla.

The soldier was evacuated none the worse for his curious accident.—(*Lancet*, Aug. 11, 1917.)

The Carrel-Dakin Method of Antiseptic Irrigation of Deep Wounds.

When Dr. Alexis Carrel at the outbreak of the European war, placed his services at the disposal of his native land—France—eighty per cent. of the amputations in the French military hospitals were due to infection and twenty per cent. to destruction of tissue. He, in common with all the surgeons of the French army, realized that the greatest surgical need of the hour was a method of better sterilization of wounds.

Out of that need came the Carrel-Dakin method of antiseptic irigation of deep wounds, the success of which in France and this country inspires confidence that it will prevent almost all amputations due to infection. It gives the surgeon perfect control; makes him master of infection.

No longer will the surgeon be called upon to decide at once whether he shall run the risk of forfeiting his patient's life by delay, or cripple his patient for life by immediate amputation. By simply keeping the wound sterile the surgeon can safely keep it open until the flesh grows and fills out the wounded part and nature completes its process of healing.

The difficulty in effecting complete sterilization heretofore, surgeons admit, has been almost entirely on account of the inability to reach anything except the surface with the antiseptics.

"Dr. Carrel at the outset conceived the idea," writes one of the investigators of his method, "that just as one washes a sponge by repeated saturations and wringings, so should a wound be washed by some sort of a 'flushing' system that would send the antiseptic solution to every part of the wound, allow it to pick up, so to speak, the germs of infection, and then carry them away. It was such a system that Dr. Carrel set himself to perfect."

Such foremost surgeons as Dr. Wm. O'Neill Sherman, chief surgeon of the Carnegie Steel Company, at Pittsburgh, Pa., and Dr. H. H. M. Lyle, professor of Clinical Surgery of the College of Physicians and Surgeons of Columbia University, who were privileged to witness the results obtained by this method of wound sterilization in the French hospitals, have been the leaders in informing American surgery of the new technique. Several American hospitals are now using the method with success.

The condition which confronted Dr. Carrel when he established his research laboratory at Compiegne, Oise, France, during the winter of 1914-15, was that all wounds produced by shells, torpedoes, grenades, etc., were infected and that the methods of handling these cases were powerless to prevent gas bangrene, septicaemia and chronic suppuration. His problem was to improve this condition.

Sir Almoth Wright, Colonel Grey and Professor Rutherford Morrison and others had formulated methods and treatments, but Carrel found them uncertain and unsatisfactory. He recognized the necessity for a specific, or a technique which would abort infection and control suppuration and which could be standardized throughout the military hospitals.

He called upon Henry D. Dakin of New York, to produce a sterilizing solution while he devoted himself to the perfection of an apparatus for applying this solution. The result is what is known today as the Carrel-Dakin method of antiseptic irrigation of deep wounds, the possibility of which is summed up by Dr. Lyle in these words:

"I firmly believe that the adoption of this method is destined to save many lives, to reduce the gravity of the mutilations, and allow the rapid return to the front of many men who would otherwise be lost to the service of the country."

The new principle involved in this wound treatment is the gradual but complete sterilization of a wound by intermittent saturation of the dressing in contact with the injured surfaces by means of the Carrel-Dakin solution of sodium hypochlorite. The solution is carried from a reservoir to the site of the wound by means of a main rubber tube. From this tube it is carried into the wound by smaller distributing tubes of rubber, the distal ends of which are perforated with fine holes.

Generally the perforated area of these tubes is wrapped with Turkish toweling or similar material to aid in thorough diffusion of the solution. Approximately every two hours the wound is saturated with the solution by releasing a screw pinch-cock which constricts the main rubber tube leading from the reservoir, which is usually hung on the head of the bed.

The proper regulation of the amount of solution is accomplished when the wound is completely saturated without flooding the bed. It is not a continuous irrigation process.

While not irritating to the underlying tissue, the solution is somewhat irritating to the skin, and it is therefore good technique to protect the skin surrounding the wound by applying to it strips of gauze saturated with ordinary petrolatum. These are laid upon the skin with their edges close to the edges of the wound.

The Carrel-Dakin solution itself is a solution of sodium hypochlorite made by adding sodium carbonate to calcium hypochlorite (chlorid of lime), but it differs from all previously used solutions of such character in the particulars that its chlorin content must be exact within given limits and that its caustic alkalinity must be completely neutralized by means of sodium bicarbonate.

The failure of all previously devised solutions of this character, Drs. Carrel and Dakin found, was due to the wide and constantly changing variations in the chlorin strength of calcium hypochlorite, and to the caustic soda contained in solutions made of it in combination with sodium carbonate.

The Carrel-Dakin solution is quite distinct from any chlorin solution previously known and should be strongly differentiated from chlorin solutions known as "Javelle Water," "Labarraque's Solution," "Chlorazene," etc. It is described as "an ideal isotonic and wound antiseptic of high disinfecting qualities with low toxic or irritating qualities."

In addition to being a strong wound and bactericidal solution because of its pyocytohemolytic powers it has the advantage of being able to dissolve pus, old blood clots, tissue debris, etc. The living tissues resist this dissolution owing to the protection afforded them by the sodium chlorid of the serum.

It is believed that the Carrel-Dakin method opens a new and hitherto unknown field to surgery. By means of this technique many amputations can be avoided and much suffering prevented. Uncertainty and doubt as to the best procedure on the part of the surgeon is removed. He need no longer be compelled to decide at once whether to amputate or run the risk of general infection or of gangrene. Serious compound fractures, infected joints or abscesses, for instance, may safely be treated by this method with entire assurance that the surgeon can produce a sterile wound and can maintain it in that condition indefinitely or until circumstances, in his opinion, warrant closure of the wound.

It is, therefore, believed that there is now at hand for the surgeon a new source of power.—(*Red Cross Notes.*)

Syphilis

Syphilis of the Stomach.

B. B. Vincent Lyon of Philadelphia says this is a disease of the stomach, caused by the treponema pallidum of Schaudinn, which may involve the mucosa, the submucosa or the gastric wall either alone or in combination. It may result from both hereditary and acquired syphilis, but in both types it should be considered a tertiary lesion. While its represents one of the rarer implantations of visceral syphilis, it may yet prove to be far more common than we were once led to believe. Pathologically the disease may show any one of the following forms:

1. A diffuse gastritis, involving the glandularis and submucosa.
2. Syphilitic ulcers, single or multiple, frequently assuming serpiginous forms and having ragged overhanging edges and a smooth base.
3. A diffuse infiltration of the gastric wall which histologically must be distinguished from linitis plastica (unless these conditions are one and the same, as many clinicians believe), from a diffuse scirrhous carinoma, and from a diffuse infiltration of a tuberculous type.
4. Pyloric stenosis.
5. Gumma, which may or may not give rise to a palpable tumor.

Symptomatology. The symptoms may vary as widely as the pathological lesion, and in many cases there are no symptoms which of themselves can be considered pathognomonic. Quite commonly we see the symptom-complex of an organic disease of the stomach involving both the motor and secretory mechanism. Aside from the comparatively few instances of motor obstruction due to syphilitic pyloric stenosis, the motor defect is much more commonly due to an extreme degree of atony associated with ectasia. The secretory defect is usually accompanied by the symptoms of a severe atrophic of sclerosing gastritis. Pyrosis is common and is of the type seen in the anacid states; sour eructations, together with the sense of an epigastric lump, weight or pressure, sometimes associated with bloating, the symptoms common to atony, together with the fermentations seen in ectasia.

In the ulcer form one of the early symptoms may be a profuse hematemesis, which is more apt to be recurrent than is common to simple gastric ulcer. In Eusterman's 23 cases (*Am. Jour. Med. Sci.*, Jan., '17), hematemesis occurred only once. In this form there is frequently pain which is more apt to occur late in the day, bears a less striking time relation to meals than is seen in simple ulcer, and is not so easily amenable to further food-taking, or to non-specific chemical therapy. There may be constitutional symptoms common to many diseases, such as anorexia, loss of weight, weakness and emaciation. Excessive thirst is not uncommon. In ordinary cases the intestinal functions are properly performer; when deranged constipation is more apt to occur.

Laboratory Findings. The gastric analyses much more commonly show a marked subacidity or anacidity with a greatly diminished or absent enzyme activity, which is what one might expect to find associated with the pathological defect of an atrophic gastritis. On the other hand, a few cases have been reported in which the hydrochloric acid content and peptic activity is normal, or even increased. An increase of endogenous mucus is generally the rule. Occult bleeding is frequently encountered both in the gastric filtrate and in the feces. The blood examinations, when diagnostically helpful, usually show a chloroanemia, a moderate leukopenia, with a relative increase in the lymphocytes, and an absolute increase in the eosinophiles. The serological examinations generally yield a definitely positive Wassermann reaction, and is especially reliable when performed by the centrifuge method and when checked by the Hecht-Weinberg Wassermann reaction.

In cases exhibiting active symptoms the *x*-ray examination usually demonstrates some definite defect in the gastric outline.

Physical Examination. The physical findings may give evidence of a severe constitutional infection, featured by anemia and cachexia, although these may frequently be lacking. Evidence of generalized syphilis may be disclosed in the teeth, gums, tongue or pharynx; in the finding of a generalized adenopathy; in a manifest syphilitic eruption; in visible scars on the genitalia or the scars from syphilitic ulcers on the extremities. Abdominal examination as restricted to the stomach itself may give no diagnostic evidence, but one can frequently demonstrate an atony, dilatation, or both, in the widened area of gastric tympany and the presence of succession splashes. In some cases one may imagine the palpatory sensation of a thickened anterior gastric wall. There may be diffuse epigastric tenderness, but even in the definite ulcer cases painful pressure points are often lacking. In some cases there may be palpatory evidence of gastric tumor, which in emaciated subjects may be visible. This is seen, of course, only in the gummatous forms and in syphilitic hypertrophic stenosis. When a palpatory tumor is evident, it may readily be mistaken for carcinoma, but under observation usually remains quiescent as to size or disappears under specific treatment. Further abdominal examination may disclose evidence of a syphilitic hepatitis or splenitis.

Diagnosis. As in some other gastric conditions, the diagnosis may have to be made by a process of exclusion. Particularly is this true in those individuals who give evidence of both a syphilitic infection and a gastric affection, but each independent of the other. In those cases in whom a positive history of a congenital or acquired syphilis can be obtained the diagnosis can be made a clinically sound one if the serological examinations are positive, and there is a cessation of gastric symptoms and a return to normal of the radiographic gastric contour after the exhibition of antiluetic therapy. Further than this the writer cannot do better than quote some of the observations as published by Morgan (*Am. Jour. Med. Sci.*, March, 1915).

"1. That the failure to glean from the individual anything suspicious of a syphilitic taint, or an abortion, or failure to have children, or a negative Wassermann does not prove that syphilis does, or does not, exist in that patient.

"2. A diseased condition of the stomach marked by a long duration with changeable symptoms, and which do not correspond to one or other of the well-recognized diseases of that organ, and which resist the accepted methods of treatment, should arouse suspicion of lues.

"3. Tumors involving the pylorus which do not cause stenosis are more often syphilitic than carcinomatous.

"4. Achylia or a low acidity, as occurred in all our cases, is usual in gastric syphilis. And where there is achylia with symptoms of ulcer, one is likely to have an ulcerating gumma or a superficial ulcer on a syphilitic infiltration base in the gastric wall.

"5. Diffuse syphilitic infiltration is usually easily detected by the palpating fingers because it produces some enlargement of the stomach, which, as happened in some of our cases, may not be readily recognized at operation. This may be true even when the infiltrating mass is to be detected by the roentgen-ray.

"6. A tumor which does not change its size and shape over long periods of observation may be syphilitic, or a tumor which disappears under anti-syphilitic treatment may be presumed to be a gumma."

Prognosis. The prognosis is no more grave than is that of visceral syphilis elsewhere, and is usually good if the disease is properly diagnosed and specific treatment is energetically carried out.

Treatment. The treatment of gastric syphilis is practically the same as is indicated in any late secondary or tertiary lesion of syphilis, save those which involve the spinal or central nervous system.

The first essential is that the specific therapy should be thoroughly and energetically carried out and the second essential is that it should be kept within the physiological tolerance of the individual patient. Since the introduction of our newer methods of treatment time has not elapsed sufficiently so that we can promise a cure in visceral syphilis. Since the introduction of salvarsan and other forms of intravenous and intramuscular medication in many cases, relapses have been fre-

quently noted. It is yet to be proved whether long sustained treatment with appropriate interruption may finally eventuate in a real cure. Nevertheless, we can be pretty well assured of promising our patients a symptomatic arrest of their disease.

As to the method of therapeutic procedure this often becomes a matter of individual preference, as guided by personal experience. If no syphilitic treatment has ever been given the patient a more intensive and energetic form should be adopted. In the writer's opinion a good deal depends upon the strength of the serological test. This means that every Wassermann that is returned 100 per cent. positive or four plus should be quantitatively estimated, inasmuch as it forms such an important check on the effectiveness of our treatment. In one case of gastric syphilis in the writer's experience with a palpable gastric tumor, presumably gumma, the Wassermann reaction was 506 per cent. positive (slightly over twenty plus), and with specific treatment was reduced to 36 per cent. positive (slightly over a plus one), at which time the patient was operated upon for the relief of a complicating duodenal ulcer, to which he finally succumbed.

In some cases spirochetes are locked up in the heart of pathological syphilitic lesions, and on account of the devascularity attendant upon the endarteritis, the syphilitic antibodies may not have access to the circulating blood stream. In such cases the Wassermann reaction may be negative, until a provocative intravenous injection of salvarsan has been given, or may be weakly positive to begin with, with a general increasing positivity under treatment, until a definite point of pathological cure has been reached, when the serological reaction will progressively diminish in intensity.

In all cases of visceral syphilis the three forms of specific chemical therapy, either in periodic courses alone or in combination with one another, will be indicated; namely, potassium iodid, the various forms of mercury, and the various forms of arsenic. Where there is clinical evidence of a palpable gastric tumor, either a gumma or a hypertrophic stenosis, the action of potassium iodid supplemented or associated with the use of mercury, often results in a miraculous disappearance of the objective findings. These two remedies best serve to break down the connective tissue barrier surrounding the gummatous lesions and so liberate the spirochetae, and give them or their antibodies access to the bloodstream where they can be more effectively attacked by the intravenous injection of neosalvarsan or salvarsan. Potassium iodid should be given in the form of a saturated solution, in a dosage beginning with 10 or 15 drops three times a day, preferably taken in milk, before meals, and increasing the amount given by one drop each dose until the physiological tolerance of the patient has been reached, after which the dosage may be dropped to one-half or three-quarters this amount and continued for interrupted periods of two weeks each for the first year and gradually decreased, if warranted, during the second and third years, with short exhibitions thereafter as long as may be required. Together with this, there should be given mercury, far preferably by deep intramuscular injection in the buttocks, in form of either the soluble or insoluble salts, preferably the former. Such injections should be given daily in courses of six to twelve and then interrupted, to be resumed in a like period, and then to be alternated with intramuscular injections of the cacodylate of soda, beginning with one grain (grams 0.06) and increasing to three grains (grams 0.18). This is the method the writer prefers in such patients as show a low positive serological reaction until the reaction becomes more strongly positive, when the use of intravenous injections of the arsenical group, salvarsan or neosalvarsan, is to be begun and given at intervals of a week or ten days until a course of three or four such injections have been made.

The objection to the use of potassium iodid, however useful it may be in the solution of gumma, lies in the fact of its disordering effect upon the gastric digestion. Furthermore, its use should be avoided, or must be cautiously exhibited in tuberculous patients, especially in the quiescent stage of fibroid forms of phthisis, on account of the danger of lighting up this infection.

Likewise the use of the preparations of mercury, either the protoiodid or the biniodid of mercury, or the pill of mixed treatment, when administered by mouth should be deprecated inasmuch as they not only upset the digestion, but the amount of absorption cannot be accurately controlled. For oral administration the writer prefers the use of calomel, in combination with bismuth subcarbonate or powdered chalk to counteract diarrhea. The advantage of intramuscular injections of mercury are therefore evident. If it is to be administered otherwise, the use of inunctions is the method next of choice. It is needless to state that before beginning such a vigorous use of mercury, the mouth and teeth should be put in a state of oral cleanliness, and thereafter be watchfully so maintained, and should there be evidence of ptyalism or gingivitis, this drug should be discontinued for a short period or its dosage be materially reduced.

In cases in which the Wassermann reaction is relatively high, indicating that the treponema pallidum or its specific products have access to the peripheral circulation, the use of intravenous injections of the various forms of arsenic should be begun at once, supplemented certainly by the use of mercury, and to a less extent by potassium iodid. Salvarsan appears to be a little more effective than the neosalvarsan, but its comparatively greater difficulty of administration makes it less commonly used. If there are no contraindications to its use, and if it is well tolerated, an injection should be given every week or ten days until four or five have been made, and then given once a month for the first year, once every second month through the second year, and twice a year thereafter as long as need be. During this time injections of mercury may be given at stated intervals, or a short course of intramuscular injections of the cacodylate of soda, and the periodic exhibition of potassium iodid in small doses (gtts. xxx to lx daily). The dietetic, mechanical, balneological and medicinal treatment is essentially the same as outlined in the management of chronic gastritis. (*Arch. Diag.*, April, 1917).

Syphilitic Lesions.

A. L. Fisher, San Francisco, calls attention to the fact that there is a considerable number of syphilitic cases simulating tuberculosis and other bone and joint lesions that escape recognition, and, second, that there is a considerable number of cases of bone and joint syphilis that give negative Wassermann reactions. He has seen at least eighteen cases of these, some of them unmistakable syphilis, within the last year or two. Of the second group, the larger one numerically, the lesions were in and about the joints rather than in the shafts of the bone. Many of the patients had been in institutions or hospitals where their disease had been regarded as tuberculous and treated accordingly. Five cases selected at random are reported in the paper. He asks why we get so many negative Wassermann reactions in bone syphilis. The percentage cannot be given exactly, but it seems at least 10 per cent. Another point that these cases emphasize is that fixation of syphilitic joints neither gives relief nor aids in the cure. Still another point is the large per cent. of children in these cases, eight out of eighteen or really eight out of fourteen under 10 years of age, quite a contrast to the ordinary teaching that syphilitic joints are not common in childhood. Another question that comes up is, What we are to consider as the most reliable test of syphilis? In his opinion it is unquestionably the therapeutic test, and he believes that this should never or almost never be omitted in trying to arrive at a conclusion regarding the nature of a chronic joint infection.

Enlist in the Sanitary Corps.

Lt. R. A. La Grinder, Sanitary Corps, Nat. Army, is on the lookout for men who have a technical knowledge of common drugs used in medicine, dentistry and veterinary practice, also those who are familiar with the articles used in hospital work; he also wants a man who can act as shipping and receiving clerk, particularly with experience in the drug line; also a stock and cost clerk, familiar with the names of drugs.

These men will be required to enlist in the Sanitary Corps, age from 18 to 40 years; physical test the same as the standard Army test.

The address of Lt. La Grinder is, Medical Supply Depot, Camp Lee, Petersburg, Va.

Pituitary Disease.

From a study of one hundred selected cases, Isador Abrahamson and Hyman Climenko, New York, deduce the following conclusions: "The posterior and middle lobes of the pituitary gland secrete a substance or substances which have, according to our observations, the following among other properties: 1. It does not influence sugar metabolism (sugar tolerance is not a sign characteristic of pituitary disease). 2. It controls the salt content on which the electrical conductivity of the blood depends. 3. This control is not exercised through the nervous system. 4. Disease of the posterior and intermediate portion of the pituitary gland disturbs the fixed ratio of the salt content of the blood which the secretion or secretions of that gland normally maintain. 5. Slight disturbance in the control induces alteration in the salt content of the blood and leads to polluria, if there is renal sufficiency, or to a water logging of the tissues if there is renal insufficiency."—(*J. A. M. A.*)

Surgery

THE ORIGIN OF ORTHOPAEDIC SURGERY.

A Rocyn Jones, of London, says: There was a work in two volumes, entitled, *"Orthopaedia; or, The Art of Correcting and Preventing Deformities in Children;* translated from the French of M. Andry, Professor of Medicine in the Royal College, and Senior Dean of the Faculty of Physick at Paris." It was printed by A. Millar at Buchanan's Head in London in 1743. M. Andry expains his choice of the term as follows:

As it is not within the reach of every reader to understand the title of orthopaedia, which is affixed to this book, I shall begin with explaining it: after which I shall give an account of the book itself. But in the first place I must take notice of two pieces which have been published upon a subject akin to this, though they differ a good deal from it; the first in the year 1584, by Scévole de Saint-Marthe, and the second in the year 1656 by Claude Quillet. As to the title, I have formed it of two Greek words—namely, orthos, which signifies straight, free from deformity, and paidion, a child Out of these two words I have compounded that of Orthopaedia, to express in one term the design I propose, which is to teach the different methods of preventing and correcting the deformities of children.

The expression seemed to me the more allowable, that the two celebrated authors above cited, have made use of terms of the same kind: the first in giving the title of Paedotrophia to a treatise upon the manner of suckling infants; and the second that of Callipaedia, to a poem upon the method of getting beautiful children: both which titles are likewise taken from the Greek: the first from pais, an infant, and trophe, nourishment; and the second from kalos, beautiful, and paidion, a Child.

In a supplement at the end of the second volume mention is made of a series of critical articles, published weekly, by the Abbé Desfontaines, under the title of "Observations upon Modern Writings," and Andry says that, "In this particular one of October 14, 1741, he (Desfontaines) confines himself to my Orthopaedia." The term "orthopaedia" was, therefore, probably used for the first time in 1741, a view corroborated by William Adams, who states that Andry published his book in Paris in that year.

Hippocrates used bandages for the cure of varus, and the only advance on this method, for centuries, was the employment of mechanical appliances. Orthopaedic surgery can only be said to have really begun with the introduction of tenotomy. The first record of tendon cutting was that performed by Lorenz, on the advice of Thilenius, in 1784. He cut the tendo Achillis through an open wound for talipes equinovarus. The first account of subcutaneous tenotomy is by Petit in 1799, who cut the tendo Achillis for a retraction of the heel after Chopart's operation. In 1816 Delpech, of Montpellier, conceived the idea of treating talipes equinus by cutting the tendo Achillis subcutaneously after first transfixing the leg just in front of the tendon. Owing to a mishap in his first case he did not pursue the operation, although in his work, *De l'Orthomorphie* (Paris, 1829) he lays down very sound rules for the operation and subsequent treatment. Stromeyer, who greatly benefited by Delpech's rules, divided the tendo Achillis by subcutaneous puncture in 1831, and by a series of successful cases established the division of tendons on a secure basis, and ensured its reception as a standard operation in surgery.

Stromeyer published his results in his book on operative orthopaedic surgery (Hanover, 1838). A young English physician in London, W. J. Little, who had talipes equino-varus following infantile paralysis in early childhood, had consulted Sir Astley Cooper and most of the approved surgical authorities in London, but from none did he receive the slightest prospect of cure. In June, 1836, he went to Hanover, and his tendo Achillis was divided by Stromeyer, who later afforded Little the opportunity of practising the operation himself. Going afterwards to Berlin, he taught the operation to Dieffenbach, and treated upwards of thirty patients in that city; Little was, therefore, the first to introduce subcutaneous surgery into the Prussian capital. Through Johannes Müller's kindness he was also allowed to dissect numerous deformed fetuses contained in the Berlin Museum. In Stromeyer's own words, Little became "the apostle of subcutaneous surgery." for until the conversion of Dieffenbach the German universities regarded the operation with disfavor, although afterwards Stromeyer himself was elected professor of surgery at Erlangen.

On his return home Little at once introduced the operation, performing his first tenotomy in London on February 20, 1837, and a few weeks later attended a discussion at the Royal Medical and Chirurgical Society on this new surgical procedure. The following year he was instrumental in founding the Royal Orthopaedic Hospital, the first public meeting of which was held in 1840 with the Earl of Eldon in the chair. This was the beginning of orthopaedic surgery in this country. In 1839 Little, who was now assistant physician and lecturer on comparative anatomy at the London Hospital, published the first English book on this branch of surgery, *A Treatise on the Nature of Club Foot and Analagous Distortions,* and dedicated it to Sir Astley Cooper, who had displayed a warm interest in what Little had been able to demonstrate. Little continued to write much, and in 1853 published another important work, *On the Nature and Treatment of the Deformities of the Human Frame.* His description of spastic diplegia in infants reveals his power as a clinician, this affection being often referred to as Little's disease.

Of the many workers who have appeared in this field since Little, two stand out prominently—William Adams and Hugh Owen Thomas. William Adams followed closely in Little's steps, and did as much as pre-antiseptic days would permit to advance the subject. He joined the Royal Orthopaedic Hospital as assistant surgeon in 1851, and did much good pathological work. His book *Club Foot: its Causes, Pathology, and Treatment,* based on his Jacksonian Prize Essay of 1864, was published in 1866. He devised operations for ankylosis at the hip-joint, and for Dupuytren's contraction, and introduced several ingenious corrective appliances. Among other works published by him was one on *The Reparative Process in Human Tendons,* based on *post-mortem* examinations and experiments on rabbits. John Hunter and Paget had previously studied tendon repair in animals, the former, it will be remembered, being induced to do so through rupturing his tendo Achillis when dancing.

Hugh Owen Thomas of Liverpool was practically a contemporary of Adams. He was a man of extraordinary originality of view. In 1869 he published a well-illustrated monograph on *A New Method in Applying the Wire Ligature in Compound Fractures of the Lower Jaw,* in which he anticipated much of the present-day method of dealing with this lesion. His now famous hip and knee splints were figured for the first time in *Diseases of the Hip, Knee, and Ankle* (1875). In this book Thomas adopted the great principle of mechanical and physiological rest, in the treatment of surgical diseases, laid down by John Hilton in his famous lectures at the Royal College of Surgeons, 1860-1862. Hilton very successfully applied his principle to diseases of the hip-joint by means of a splint, which consisted of a leather case from the pelvis to below the knee, with a posterior steel extension and foot-piece to fix the rest of the limb. The Thomas splint was an improvement on this, in that it was simpler and could be variously modified for correction purposes in cases with flexion.

It took many years, however, for Hilton and Thomas to change surgical opinion upon the treatment of joint tuberculosis. Thomas was the first to point out the cardinal principle of relaxing paralysed muscles, and thus preventing overstretching; he carried it out in practice with his metal splint for dorsiflexion at the wrist, and with his caliper for maintaining extension at the knee.—(*Brit. Med. J.,* August 11, 1917.)

The Prognosis of Duodenal Ulcer.

Max Einhorn, of New York, says the prognosis of a disease runs parallel with its therapeutic possibilities. Progress in the cure of a malady improves its prognosis. In duodenal ulcer great advances have recently been made in diagnosis as well as in treatment. The outlook, therefore, for patients suffering from a duodenal ulcer is nowadays much brighter and more favorable than in former years.

With regard to prognosis it will be well to divide duodenal ulcers into the following groups:

(a) Simple duodenal ulcer;
(b) Duodenal ulcer accompanied by pylorospasm and usually also hypersecretion (alimentary or continuous);
(c) Duodenal ulcer accompanied by pyloric or duodenal stenosis;
(d) Duodenal ulcer with recurrent hemorrhages.

(a) Simple duodenal ulcer. Here the usual symptoms are epigastric distress two to three hours after meals; sometimes "hunger pain"; long periods of euphoria alternating with comparatively short periods of suffering. Gastric hemorrhage or melena may have occurred once.

This group gives a comparatively good prognosis provided that some form of a rest cure is rigidly carried out: rectal alimentation then von Leube-Ziemssen milk diet; or duodenal

alimentation; or simply a milk and egg diet and rest abed for about two to three weeks. Later on no overexertion (physical or mental) and a general hygienic way of living.

The oftener the attacks recur the more doubtful the prognosis becomes as to a complete cure by medical measures. Operative intervention (gastroenterostomy preferably with pyloric occlusion) offers a pretty good prognosis with regard to the future.

(b) Duodenal ulcer accompanied by pylorospasm and also hypersecretion (alimentary or continuous). Severe pains and frequent vomiting are here the chief symptoms. Hypersecretion either alimentary or continuous is here constantly encountered. The gastric juice is usually hyperacid. When the pylorospasm reaches a higher degree slight ischochymia appears off and on. The prognosis of this group is quite severe under ordinary methods of treatment (alkalies, even milk diet). Duodenal alimentation gives a better prognosis. But in case the latter does not produce the desired effect in from two to three weeks, an operation (gastroenterostomy with pyloric occlusion) should be performed. The latter usually improves the prognosis.

(c) Duodenal ulcer accompanied by pyloric or duodenal stenosis.

Ischochymia is here constantly present. In cases of beginning plyoric stenosis; duodenal alimentation and then stretching of the pylorus may be tried. The prognosis under this mode of treatment varies in different patients. The condition must be watched and the prognosis made accordingly. Should there be no improvement, or in case the stenosis is further advanced, so that the duodenal bucket fails to pass through the pylorus, an operation (gastroenterostomy) should be performed. Barring the dangers resulting from the surgical intervention, the result is here usually very good, and the prognosis accordingly favorable.

In duodenal stenosis, when situated below the papilla of Vater, there is bile constantly found in the stomach or in the vomitus. The treatment requires surgical intervention and the prognosis then becomes pretty good.

(d) Duodenal ulcer with periodically recurring hemorrhages.

In this group the main predominating symptom is a profuse hemorrhage (either hematemesis or melena or both), which periodically returns and endangers the life of the patient. An interval operation (gastroenterostomy eventually with pyloric occlusion) gives the best results and renders the prognosis more favorable. The latter must, however, be made with caution, as there may be a new hemorrhage even after apparent perfect recovery from the operation. In the latter event the prognosis becomes doubtful and worse with each repeated hemorrhage.

In groups (b), (c), and (d) the prognosis, in case no surgical intervention be undertaken, must not be made too favorable, as there is a possibility of perforation. With the gravity of symptoms the liability of this event increases. Continuous hypersecretion and severe pains are frequently prone to perforation. Appropriate measures should then be taken, in order to make the outlook brighter. (*Arch. Diag.*, No. 1, 1917.)

Diagnosis of Duodenal Ulcer.

John B. Deaver says chronic appendicitis frequently presents the same hunger pains as in duodenal ulcer, hyperacidity is not unusual and many cases show the same chronicity as in duodenal ulcer. The main difference between the two is the freedom from discomfort in the duodenal ulcers between the attacks, while in appendicitis the flautulency and discomfort are apt to be constantly present. But these patients with "appendiceal indigestion" usually suffer more pain after certain kinds of food, especially starchy food and red meats. The pain, however, usually is not so severe as in duodenal ulcer and radiates downward. The latter being one of the main points in the differential diagnosis. In appendicitis exercise frequently increases the local discomfort—not so in duodenal ulcer. In fact, the appendix is found diseased in so many cases of duodenal as well as of gastric ulcer, that these latter may be considered secondary conditions; that is to say, the result of infection from some other organ with the evidence strongly in favor of the appendix as the *corpus delicti*. Deaver makes it a practice to remove the appendix in practically all cases of gastric and duodenal ulcer.

Some authors claim that it is almost impossible clinically to differentiate between gastric and duodenal ulcer, but he thinks there are enough points of variation to enable such a differential diagnosis with some degree of certainty. In distinguishing between the two we may to some extent be guided by the time relation of the ingestion of food and the onset of the symptoms. Although the chain of symptoms of duodenal ulcer is said to be not much affected by the location of the ulcer, it is generally conceded that the longer the interval between the meals taken and the appearance of the pain and the more prompt the food relief, the lower down will the ulcer eventually be found. Therefore, if pain appears soon after eating, in one-half to two hours, and the food relief is not prompt, we may logically expect to find a gastric rather than a duodenal location. Again the radiations of pain, if any, in duodenal ulcer are usually to the right, while in gastric ulcer the pain radiates to the left as a rule. The pain also is apt to be more constant than in duodenal ulcer. Vomiting is also more frequently a symptom of gastric ulcer, as is also hemorrhage, the latter usually in the form of hematemesis, while in duodenal ulcer it is more generally melenic.

Cholelithiasis presents rather more difficulty, but care in taking the history will usually enable the experienced clinician to forecast the true state of affairs. The diagnosis is oftentimes uncertain when adhesions exist between the gall-bladder and the stomach and the duodenum, or when the gall-stones have pushed toward the duodenum; hyperacidity being also a symptom of gall-stone disease, adds to the confusion. On the whole, however, cholelithiasis is marked by such severe colicky pain with sudden and unaccountable onset, and almost as sudden and mysterious cessation, that recognition should, as a rule, be easy. Lavage will frequently cut short an attack of biliary colic, but has no influence on the pain of duodenal ulcer. In this connection Moynihan mentions the gastric crises of tabes dorsalis, as a possible source of error in diagnosis.

Chronic cholecystitis very frequently clouds the diagnosis of ulcer, especially of the perforating duodenal ulcer. It presents the same chronicity, though the attacks do not last so long, the pain, hyperacidity and flatulency also present show a certain degree of relationship to food intake, while not infrequently the absence of typical jaundice in cholecystitis and its presence in duodenal ulcer, as noted in several of our cases, make confusion worse confounded.

Symptoms similar to those of chronic pancreatitis or some pancreatic involvement, such as pancreatic lymphangitis, are not rarely met with in duodenal ulcer. This is not surprising in view of the close relationship existing between the duodenum and the pancreas and the frequent infiltration of ulcer into the pancreas itself and the close intercommunication between the pancreatic and the duodenal lymphatics.—(*Arch. Diag.*, No. 1, 1917.)

The Carrel Method of Wound Sterilization.

Sherman says that if it is necessary to amputate for loss of substance, chop or guillotine aperiosteal operation is the method of choice; this to be followed by Carrel's method of wound sterilization. According to Tuffier 80 per cent. of the amputations are due to infection and 20 per cent. to destruction of tissue. The original Dakin solution contained: 140 grams dry sodium carbonate dissolved in 10 liters of tap water, to which 200 grams chloride of lime (chlorinated lime) is added and 40 grams boric acid. The detailed preparation is given of the solution as now used (technic of Dufresne). Many of the so-called Dakin solutions are not prepared in accordance with the formula of the name they bear and as a result the solution has been condemned where some other solution has been used in the name of Dakin. To be successful one must follow the technic of Carrel. Dakin's solution represents but 20 per cent. of the cure and the technic of Carrel represents 80 per cent. It should never be forgotten that the solution must not be heated. It should never be applied or used in the eye or intravenously, because of its hemolytic action. It should be kept in a cool place, free from exposure to light. It should never come in contact with alcohol. It has been demonstrated that the great majority of wounds can be closed by suture and without suppuration. The stay of the wounded in the hospital and period of convalescence is greatly shortened and many now leave in four to six weeks, who would have required treatment from three to six months under former method. All complications such as atrophies, ankylosis. adhesions, septicemia and amputations are minimized; the mortality rate is also greatly reduced. Sherman concludes that infection can be aborted if the treatment is begun within the first twenty-four hours. Suppuration, when well established, can be controlled if the focus can be reached. The success of the treatment is dependent upon the perfection of the Carrel technic and the acceptance of all the details. The effect of Dakin's solution is entirely local; there being no danger of toxemia from absorption, regardless of the amount used. Carrel's technic, using Dakin's solution, is a specific against infection of wounds—(*S. G. O.*, p. 255, 1917.)

The Physician's Library

"Alcohol, Its Relation to Human Efficiency and Longevity." by Dr. Eugene Lyman Fisk, Medical Director of the Life Extension Institute, and author, with Professor Irving Fisher, of "How to Live." 216 pages. $1.00, net; by mail, $1.12. New York: Funk & Wagnalls Company, 1917.

Alcohol has no place in our life as a beverage. Dr. Fisk says so and he is in a position to know, for he has long been a dominating figure in the scientific world. After careful experimental study and long observation as the head of the medical department of a great insurance company. Dr. Fisk concludes that alcohol is a destructive force, wholly evil in its total effects.

This book is an absorbingly interesting study of alcohol and its effects upon humanity, which should be read with profound attention at this time, when the evidence that society is paying a heavy bill for its indulgence in stimulants can no longer be disregarded by thinking men and women. While many people pay no attention to the talk of the prohibitionists, who usually have no scientific foundation for many of their statements, they must give heed to the scientific findings of a man for whose judgment we have the greatest respect.

This book will take rank with "How to Live," a little book, which would, if its precepts were followed, be one of the greatest possible factors in the prolongation of the lives of the human race.

Materia Medica. By Oscar W. Bethea, M. D., of Tulane University. Cloth. 560 pages. $4.50. Philadelphia: F. A. Davis Co., 1917.

Based on the belief that textbooks often lack two essentials, viz.: in what form and by what methods should therapeutic agents be employed to obtain the best results and how should the physician's orders be written so as to serve the best interests of the patient, Dr. Bethea has produced a first rate textbook. He has handled a dry subject admirably and has covered what he believes to be the faults of other books in an enlightening way. The volume will be found helpful for reference or study.

The Surgical Clinics of Chicago, Volume I, Number III (June, 1917). 231 pages. Published bi-monthly. Price per year: Paper $10.00; Cloth, $14.00. Philadelphia and London: W. B. Saunders Company. 1917.

There are 21 clinics in this issue by as many surgeons and they cover a wide range of surgical topics. This number maintains the high standard of its predecessor.

Gynecology. By Henry F. Lewis, M. D., and Alfred de Roulet, M. D., of Loyola University. Cloth. 450 pages. $4. St. Louis: C. V. Mosby Co., 1917.

This book is intended for medical students and is of value as a teaching medium. It makes no particular appeal to the physician as it follows the usual path already trodden smooth by many gynecological writers.

Physical Exercises for Invalids and Convalscents. By Edward H. Ochsner, M. D. 75 cents. St. Louis: C. V. Mosby Co., 1917.

A number of useful exercises for invalids and convalescents are set forth clearly and they could well be utilized in the practice of most physicians.

Eye, Ear, Nose and Throat. By Howard C. Ballenger, M. D. and G. G. Wippern, M. D., of Chicago. Second edition. Cloth. 525 pages. Philadelphia and New York: Lea & Febiger, 1917.

The authors have touched a popular chord in the manner of their presentation. The great variety of ailments to which these important organs are subject is carefully covered and the main facts thereon elucidated most satisfactorily. The book has been brought up to date and is withal a manual to which can be given honest commendation.

Roentgen Technic (Diagnostic). By Norman C. Prince, M. D., attending Roentgenologist to the Omaha Free Dental Dispensary for Children. Cloth. 140 pages. 71 illustrations Price, $2.00. St. Louis: C. V. Mosby Co., 1917.

X-ray workers will find this little volume of very great assistance. By excellent plates and enlightening text Prince has given a wealth of facts in small compass. His chapter on positions and postures is well worth consideration. Roentgenologists have a treat awaiting them in the persual of this book.

Diseases of Children. By George M. Tuttle, M. D., and Phelps G. Hurford, M. D., of Washington University Medical School. Cloth. 598 pages. Philadelphia and New York, 1917.

This excellent book has been entirely rewritten, very largely by Dr. Hurford and it contains, as is to be expected, the latest views in the practice of pediatry. It is, in a word, a complete resume of the diseases of children and the details of their management. It affords the general practitioner an ample opportunity to keep fully abreast of the times in pediatry. The book is short, concise and accurate and is what the busy physician needs.

The Medical Clinics of North America. Volume I, Number 1 (The Johns Hopkins Hospital Number, July, 1917). 193 pages. 14 illustrations. Published bi-monthly. Price per year: Paper, $10.00; Cloth, $14.00. Philadelphia and London: W. B. Saunders Company, 1917.

Among the contributors to the initial number of what bids fair to be a great exponent of American medicine are Barker, Janeway, Brown, Harriman, Futcher, and Mosenthal, who present a variety of conditions.

Immunization in Poliomyelitis.

Reviewing the literature on anterior poliomyelitis, we find many workers, each one claiming to have found the organism which is the etiologic factor in this disease.

These may be dvided into three classes.

1. The globoid bodies of Flexner and Noguchi.
2. Well known pathogenic organisms, such as streptococci, staphylococci, baccilus coli of Rosenow, Herzog and Nuzum et al.
3. Recognized contaminating organisms as bacillus subtilitis, etc.

From 245 cases collected by Kolmer, Rosenow, Herzog, Nuzum et al, we obtain the following data in regard to their findings.

Diplococci (Staphylococci)	31%
Streptococci	47%
Diphtheroid Bacilli	12%
Gram Negative Bacilli	17%
Bacillus Subtilitis	9%

Experimental work by Kolmar, Flexner and Noguchi has shown that poliomyelitis cannot be produced in rabbits or other animals by the injection of large or small amounts of any of these cultures, although they may, from their ordinary pyogenic and pathogenic properties, seriously complicate and even determine the fatal issue of what might ordinarily have been a mild case.

From this it would seem that in all cases of poliomyelitis we are justified in using a combined stock vaccine.

Vaughan claims to have produced immunity in animals against typhoid and cholera by injecting B. subtilitis and B. prodigiosis.

Klein was able to protect animals against B. pyocyaneous by injecting dead cultures of B. prodigiosis.

Miller and Lusk have claimed success in the treatment of arthritis by injecting typhoid vaccine.

The work of Sir A. E. Wright et al has shown that a specific antibody is produced against bacteria by the injection of dead organisms of the same species.

All these and the works of many others go to prove that two types of antibody production are stimulated by the injection of dead bacteria.

1. Antibodies, specific against the organism injected.
2. Antibodies, non-specific having a group action against several species of bacteria.

While we are still in ignorance of the etiologic factor in poliomyelitis and since we have more or less definite knowledge concerning the association of one or more of the previously mentioned organisms, why not avail ourselves of both immunizing reactions; the one against the known organisms present and the other against the unknown virus.

The organisms usually present have, as before stated, the morphological characteristics of staphylococci, streptococci, colon bacillus and other organisms, therefore the logical vaccine to use in these cases is Sherman's 35.—(*Bacterial Therapist.*)

Bacteria in Vagina in Latter Months of Pregnancy.

Permar studied 130 cases and found that among these patients streptococci were never seen as such in direct smear, and by culture only 26 strains were recovered. Only 3 of these gave the carbohydrate reactions, and as animal inoculations were not carried out, the virulence of these strains was not known. In these investigations a variety of organisms were found. A relation apparently exists between the ability of various growths to flourish in an acid medium, and the presence of these organisms, notably the streptococci, the colon bacilli and other forms, in the vagina.—(*Am. Jour. Obst.*, April, 1917.)

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	Carbohydrates	6.59
	Salts	.58
	Water	90.06
		100.00

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Dilated Duodenum.

D. Vanderhoof, Richmond, describes the anatomic conditions of the duodenum, and how it is constricted by the pressure of the mesentery. Certain contributing factors play a part in producing mesenteric ileus. The mesentery must not be too long, and again the duodenum is rendered much more liable to compression by any unusual prominency of the lumbar vertebrae. A dilated cecum is also mentioned, as found in cases reported by Bloodgood. Vanderhoof's experience with chronic dilatation of the duodenum embraces six cases and from the study of these patients he is certain that other cases have been overlooked. After the reports of these six cases, he reviews the literature of duodenal obstruction. Anders in 1912 was able to collect 262 cases. In over one-half of these the constriction was the result of duodenal ulcer. In twenty-nine cases, or 11 per cent., the constriction was attributed to compression by the root of the mesentry.

The symptoms of chronic dilatation of the duodenum are those of obstruction below the common bile duct entrance in this part of the bowel. They must be conveniently grouped as follows: "1. Persistent, or recurring, vomiting. In most instances the vomitus contains bile, often in considerable quantity. 2. Pain in the upper part of the abdomen, generally referred to the right hypochondrium. As a rule, this is described as an aching or dragging pain, but it may be severe so as to suggest biliary colic, or, in other instances, it stimulates the pain of peptic ulcer with irregular food-relief. 3. 'Habitus enteroptoticus,' often associated with exaggerated lordosis. 4. Obstinate constipation is the rule, although this may not be a feature on the case. Occasionally the stools are colorless and relatively free from bile. 5. Vague toxic symptoms are common. Headache is frequently a prominent symptom. These patients appear to be peculiarly sensitive and of an unstable nervous temperament. In marked cases starvation with acidosis develops and leads to a fatal termination."

The chief clinical interest is in the fact that the symptoms are almost always misinterpreted. In one group no obvious cause is noted for the condition and it is thought to be functional. Vanderhoof is convinced that his complacency in the successful outcome of many cases of thin, neurotic, enteroptotic women whom he relieved of "hysterical vomiting" by means of rest cures with psychotherapy, forced feeding, massage, etc., was due to the increase of weight relieving the visceroptosis, the chief factor in chronic mesenteric ileus. In a second group of cases the clinical picture is very suggestive of cholecystitis, and in a third group vomiting is almost continuous and ultimately fatal. The abundant and constant entrance of bile into the stomach is almost pathognomonic. The diagnosis except in those cases discovered at operation or necropsy, can be reached only by having the condition in mind and looking out for it and then using the Roentgen ray.

The treatment may be either medical or surgical, dependent on the degree of obstruction. In the simpler cases a well conducted rest cure may suffice, and in more obstinate cases postural treatment has succeeded. By placing the patient in the knee-chest position, the weight of the stomach and intestine pulls the viscera toward the anterior abdominal wall, and thus tends to release the compression on the duodenum. The knee-chest position may be maintained for fifteen minutes, the patient lying prone in the intervals, and if the vomiting stops for a few hours the pleasanter left side position may be ordered with the hips elevated. The treatment may be supplemented by frequent washing out of the stomach with the tube. In severer cases where starvation and acidosis threaten, surgery must be employed and the procedures have varied among different operators; widening the duodenal slit in the mesentery, resections, etc. The operation of gastroenterostomy has failed with few exceptions. "We have in dilatation of the duodenum a clinical entity, with a definite symptomatology and characteristic Roentgen-ray findings, due to compression of the terminalw portion of the duodenum by the root of the mesentery. It is a feature of many cases of visceroptosis and is a remediable disease subject to proper mechanical treatment."—(*J. A. M. A.*)

Chronic Cardiac Disease.

The patient with organic heart disease needs constant attention to his digestion and nutrition. A little falling off in the general vitality and the compensatory status of the heart may be lost forever. At the first sign of nutritional decline, therefore, Gray's Glycerine Tonic Comp. should be given. This dependable tonic braces a wavering organism by reinforcing weakened functions. Thus it not only directly contributes to cardiac power, but what is vastly more important, materially reduces the stress under which a feeble heart constantly has to labor. In other words, while increasing the carrying power of the heart, it also decreases the burden.

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The great progress that has been made in scientific knowledge concerning bodily nutrition—and physiologic chemistry in general—has emphasized the great importance of certain enzymes and nutrients in maintaining nutritional processes at their highest efficiency.

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Pneumonia.

Rufus Cole says, judging from his own experience at the Rockefeller Institute where the type of pneumococcus is being determined as a routine procedure, about one-third of the cases of pneumonia are due to Type I, one-third to Type II, 10 to fifteen per cent. to Type III, and the remainder are due to infection with pneumococci belonging in the fourth group. While in small numbers of cases these proportions may vary, as well as according to locality, their own figures from year to year have been fairly consistent and the results obtained by others have not varied widely from those stated. As regards mortality the figures indicate that cases due to Type I and Type II are of average severity, the mortality being from 25 to 30 per cent. Those due to Type III are severe, one-half or more of the patients dying, while the cases due to the organisms of Group IV are milder and the mortality not usually more than 10 to 15 per cent. These figures are of great value in prognosis and, with the knowledge obtained by blood culture and testing the urine for precipitable substance, much information is gained regarding the probable outcome. Later studies have not shown that the serum treatment as now applied is of much importance in cases due to Type II.

As regards the serum treatment of cases of Type I infection, however, later observations have confirmed the results obtained in the previous small series of cases, and it seems evident that immune serum rightly employed in this form of infection is of distinct value and the mortality is materially reduced. Up to the present 105 cases of this type have been treated with serum in the hospital of the Rockefeller Institute alone, and of these 97 patients have recovered and 8 have died from various complications of the disease. Similar results have also been obtained in other hospitals where the full treatment could be carried out in all its detail. These results and the fact that certain public health laboratories and commercial houses are preparing to make this serum still more available gives prospect of its extensive use. Certain practical points regarding this form of treatment are discussed. One question raised immediately is whether it is justifiable to treat all cases of pneumonia with serum or whether its use should be confined to known cases of Type I infection, or whether it is justifiable to use a polyvalent serum in all cases of pneumonia.

The objection to the use of Type I serum in all cases is that in at least two-thirds we know it will do no good whatever. The immunologic reactions of this infectious agent are absolutely specific and we now have the means of determining the type. The indiscriminate use of serums without this determination will only lead to inefficient and improper use with Type I infection. It has been suggested to avoid the delay incident to the determination of type, a single dose of Type I serum should be given in every case; if it should be proved not to be Type I, it need not be repeated. In all forms of serum therapy the earlier the serum is administered the greater is its effectiveness. If this form of serum therapy is going to be of great practical value it is important for all laboratories to be prepared to furnish prompt and accurate diagnoses of type. In any places where examinations of throat cultures for diphtheria bacilli can be made, the tests for determination of types of pneumococci can be performed. In administering serum, however, it is important to know that the serum is of proper strength and potency, and Cole has found that certain serums prepared by commercial houses have little or no value. An effective serum will be one that is equal in potency to the standard serum, 0.2 c.c. of which protects a 20 gram mouse against 0.1 c.c. of a culture, of which 0.000001 c.c. will kill. The serum should be given intravenously, preferably diluted once with freshy prepared sterile salt solution, though this dilution is not absolutely necessary if it is injected slowly enough.

The dosage is at present empirical. Cole believes, however, that the dose for an adult should be at least 75 to 100 c. c., and repeated if necessary every six or eight hours until a favorable result is obtained. In most cases two or three doses are enough. It is very important to watch the patient after the administration of serum, taking the temperature every two hours, and if after the first low period it begins to rise in eight or twenty-four hours the serum should be repeated at once. The object of the serum is to produce in the patient's blood a concentration of antibodies such as that which occurs during natural recovery from the disease. The possibility of serum sickness is mentioned and the reactions are described. If the patient is sensitive there will be a characteristic local edema and erythema not appearing in other cases, and elevation of temperature, skin rashes, etc., but it is a very unsafe rule to ascribe all symptoms occurring after injection to serum sickness, as there may be other complications producing them. Care should be taken to avoid anaphylactic shock, and the physician should be familiar with the different kinds of serum reactions, and while trying to avoid them he should not give up the serum treatment.—(*J. A. M. A.*)

Tubercle Bacilli in Breast Milk.

S. L. Wang and F. Coonley, New York, have examined the breast milk of twenty-eight tuberculous women for tubercle bacilli. They represented most of the types of tuberculosis, and due precautions were taken in obtaining the milk. There was no apparent mammary disease or any suspicion of such, and about 450 microscopic examinations were made in the twenty-eight cases. Specimens from fifteen cases were injected into guinea-pigs intraperitoneally, with invariable negative results. Observations were also made on two guinea-pigs fed with breast milk from tuberculous women three times daily for a month. No evidence of tuberculosis was found in either. All their results were negative with one exception which may be questioned, and their experiments indicate that tubercle bacilli are rarely found in the breast milk of tuberculous women without mammary disease. The possibility of infection from this source is probably slight, but it is probably best to interdict nursing in every instance because of the other additional factors that may exist. An exception might be made that the mother with a closed case of tuberculosis might be allowed to nurse her infant, although it is often difficult to distinguish between a closed and open case after pregnancy and labor.—(*J. A. M. A.*)

Typhoid Fever.

W. Coleman, New York, has published a statistical study of 444 cases of typhoid fever during the years from 1903 to 1914, inclusive, showing the advantages of the high calory diet. Two hundred and twenty-two of the patients had this diet and 222 were on the milk diet. The various phases and complications of the disease according as they occurred under one or the other diet are noted as well as the mortality and general clinical picture. The following is his summary: "A comparative study of 222 patients with typhoid fever on the high calory diet and of an equal number of patients on a milk diet has brought out the fact that the natural history of the disease, as it has previously been known, is profoundly altered by the maintenance of an optimal state of nutrition. The range of temperature apparently is not affected, but the total duration of the disease is shortened, in some instances by months, through the shortening of convalescence. Certain symptoms which hitherto have been attributed to the specific action of the typhoid bacillus have been discovered to be due to faulty methods of treatment, in particualr to an inadequate or improperly balanced diet. Complications are rendered less formidable, and perhaps less frequent, by maintaining the patient in the best possible state of nutrition. Moreover, the mortality of the disease is reduced from 50 to 75 per cent."—(*J. A. M. A.*)

Sterility.

The following are the conclusions of a paper by V. D. Lespinasse, Chicago, written with special reference to weak or impaired spermatozoa and the general diagnosis and treatment of the condition: "Many cases of sterility attributed to the woman are due to weak spermatozoa. This type of case can be diagnosed by careful examination of the semen, as has been described in the foregoing. The cause of sterility is as often in the male as in the female, if not oftener. Treatment depends entirely on the cause. Obstructive cases, male or female, are operative. Weak sperm cases would indicate direct uterine insemination and glandular therapy, diet, modes of life, etc. Secretion cases necessitate appropriate therapy to check or modify the destructive secretions. Nonproduction of the essential elements, namely, spermatozoa or ova, would indicate glandular therapy."

Pyorrhea Alveolaris.

The bacterial findings in the mouth and their relations to pyorrhea and interstitial gingivitis are discussed by A. W. Lescohier, Detroit, who reviews some of the literature and says that his personal observations relative to the occurrence of streptococci, staphylococci and pneumococci in pyorrhea would place the streptococci first in frequency, and the staphylococcus next, the pneumococcus being observed in only a small per cent. of cases. The tendency, he says, to consider any etiologic factor as an entity instead of its relations to other influences is unfortunate, as irritation and injuries and metabolic disturbances, may also play a part. The bacterial element is probably most important, however, in the destructive tissue changes, and certainly so in the serious sequels.

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Each ampoule contains the exact amount of liquid chlorin required to produce one liter of the Carrel-Dakin solution and is accompanied by a tube of sodium salts exactly proportionate to the amount of liquid chlorin

Simply dissolve the contents of the ampoule and of the tube in water and in a few seconds you produce the Carrel-Dakin antiseptic solution of standard strength of between 45% and 50% of sodium hypochlorite

All settling, decantation and filtering to eliminate lime sludge is avoided; the solution is exact and definite; no analysis is necessary. Light and ordinary temperature conditions do not affect it. The solution is ready for immediate use. You may absolutely rely upon its being the same every time.

SEND FOR DESCRIPTIVE CIRCULAR

Johnson & Johnson have issued an eight-page illustrated circular describing the Carrel-Dakin method of wound sterilization and the Johnson & Johnson method of making the Carrel-Dakin solution.

The methods which are described have been abridged from the writings of Drs. Carrel, Sherman, Lyle and others. A copy will be sent to any physician upon request.

Chlorin-soda Ampoules, Johnson & Johnson, may be obtained through physicians' supply houses and the Drug Trade.

Johnson & Johnson

New Brunswick, N. J., U. S. A.

(a) Quality - - - - - - - (z) Quality

That's a bird's-eye-view of our laboratory methods. We start with first quality drugs and chemicals. Every step of every process is critically watched by an expert; and every stage of every process is carefully counter-checked by two experts. From (a) to (z) there is a constant, critical, conscientious censorship of every little detail. And the logical end-result? QUALITY PRODUCTS! They surely will merit your confidence and justify your specification of "S & D".

SHARP & DOHME

Since 1860

Purveyors to Particular Prescribers

407 New Members Elected in 1916!

American Medico-Pharmaceutical League—Twenty-first annual convention at the Hotel Astor, Times Square, New York City, on Monday, May 27th, 1918. The first medical association in the Americas to admit pharmacists. All desiring to read papers are invited to forward titles. Dues, $2 per annum; initiation fee, $1. Physicians, pharmacists and dentists eligible. Eugenie R. Eliscu, M. D., treasurer, New York City; Dr. S. Brothers, corresponding secretary, 96 New Jersey Avenue, Brooklyn, N. Y. Telephone. A certificate of membership free to each paid-up member.

For Sale.—Advertising medical office, long established, doing good clean business, income about $6,000 net which can be doubled by an active man. Reason for selling is age. $4,000 cash necessary. Owner will stay in office to post buyer for a few weeks. C. Burtt, 221 East Seventeenth Street, New York City. C.10.

Tonics Preferable to Stimulants.

In selecting a tonic it is highly desirable not to mistake stimulation for tonic action. Stimulation means unduly exciting the higher nerve centers, suddenly and often excessively elevating the blood pressure, and providing a quick but evanescent effect which rapidly passes away and is many times more harmful than beneficial. Tonic action means the gradual restoration of functional efficiency—"helping the body to help itself." Thus, Gray's Glycerine Tonic Comp. is a true tonic, with all the advantages and none of the drawbacks of a stimulant. To state it tersely, "Gray's" is an aid and a support to body functions—a genuine prop—not merely a spur or lash.

Pulvoids Natrium Compound.

We would suggest that physicians write at once to The Drug Products Co., Inc., of 48 West 4th Street, New York, in relation to new indications for Pulvoids Natrium Compound, in which it has been tried and its efficiency fully proven. This literature will be important and interesting.

In pneumonia Watson (*Pac. Med. Jour.*) alternates gelsemium with a mixture of aconite and asclepias until the fever drops below 100 F.

"Maytime" Plays to Capacity Houses at the Shubert.

No change has been made in the plans of the Messrs. Shubert to keep "Maytime" at the Shubert Theatre for the remainder of the season. Crowded houses greet every performance of this sparkling musical play, and with Peggy Wood, Charles Purcell and William Norris in the featured roles the production is destined to continue until warm weather. The play is staged under the personal direction of Mr. J. J. Shubert and Edward P. Temple. The book and lyrics were written by Rida Johnson Young, and the musical numbers by Sigmund Romberg.

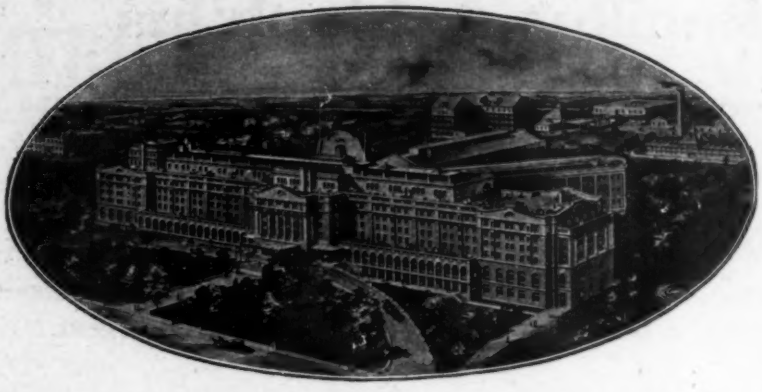
The story is presented in four episodes, commencing with a scene in Washington Square in 1840, and concluding with a portrayal of fashionable life in 1917. Each period is a wealth of color and brilliancy of costuming. The shattered romance of two sweethearts of 1840, passed down through generations until it is finally realized by their respective grandchildren, is presented in a clean, delightful manner.

Other members of the all-star cast include Gertrude Vanderbilt, Rose Winter, Maude Odell, Laura Arnold, Edith Wright, Minna Valieri, Florence Bruce, Arthur Albro, Grace Daniels, Douglas J. Wood, Teddy Webb, Edward F. Nannary, Carl Stall, Richard Morgan, R. Melbourne, Ralph J. Herbert, Warner Anderson, Pearl Baremore, Eleanor B. Fox, C. H. Miller and others.

Matinees are given on Wednesday and Saturday.

Virulence of Diphtheria Bacilli from Diphtheria Patients and Carriers.

Weaver states that diphtheria bacilli from patients with diphtheria and from carriers who have been in contact with such patients are practically always virulent. The bacilli in such cases usually remain virulent up to the time of disappearance, even though a long time has elapsed. Carriers should be kept in isolation until the bacilli have been gotten rid of, or until the strains cultivated have been proved to be non-virulent. Cultures from the nose as well as from the throat should be made in all suspected cases.—(*Jour. Inf. Dis.*, No. 2, 1917.)



PROPERTIES consist of 30 buildings—accommodations for 1,200 patients—20 acres of beautiful shady lawns—model dairy—extensive farm and greenhouse systems—pure artesian water supply—large staff of specializing physicians, nurses, dietitians, physical directors and general assistants—wholesome, nutritious bill of fare—thoroughgoing diagnostic methods—complete, modern therapeutic equipment—splendid facilities for outdoor recreation.

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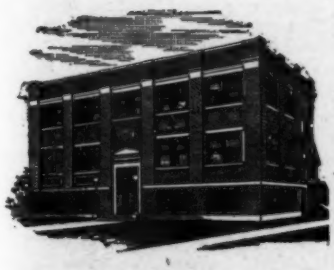
IN ACUTE INFECTIONS

The early administration of Sherman's Bacterial Vaccines will reduce the average course of acute infections like Pneumonia, Bronchopneumonia, Sepsis, Erysipelas, Mastoiditis, Rheumatic Fever, Colds, Bronchitis, etc., to less than one-third the usual course of such infectious diseases, with a proportionate reduction of the mortality rate.



Sherman's Bacterial Vaccines are prepared in our specially constructed Laboratories, devoted exclusively to the manufacture of these preparations and are marketed in standardized suspensions.

Write for literature.

MANUFACTURER OF BACTERIAL VACCINES

G. H. SHERMAN, M.D.

Detroit, Mich. U.S.A.

The Bacillus Acidophilus

B. Acidophilus is an organism of high acid producing (antiputrefactive) qualities whose NORMAL HABITAT is the HUMAN INTESTINE.

To ensure a sufficiency of this natural defensive organism, when depletion or extinction occurs from any cause whatever, we now offer this B. Acidophilus as a new therapeutic agent.

Supplied in three forms under—

Registered name—BACID (applied for) { Liquid, Capsules, Tablets

Descriptive circular on request.

THE ARLINGTON CHEMICAL CO.

YONKERS, N. Y.

Shock.

F. C. Mann, Rochester, Minn., using the term in the sense that a surgeon applies it when a patient develops alarming symptoms during or immediately following an operation without obvious definite cause, says that the two points of paramount importance in considering the subject of shock during general anesthesia are the cause or the causes of the condition and the effect of the anesthetic in either preventing or emphasizing it. Owing to the general use of ether and the ease with which definite tensions may be administered it was the only anesthetic used in his experiments, and the one on which all his conclusions are based. There has been a tendency, which in all probability has reached its zenith, to ascribe the condition of shock to a single cause, and it is his purpose to discuss here the different possible causes of shock during anesthesia, the probable physiologic mechanism involved, and the relation to ether anesthesia.

The only uniform and certain method of producing shock experimentally is by exposure of the abdominal viscera, and more is known concerning this form of shock than any other. It is mainly due to a failure of the venous pressure mechanism, though loss of carbon dioxid is probably not the primary factor. His own experiments and the work of others have demonstrated the process by which exposure of the viscera causes shock. He explains it by the effects on the vasomotor system in some detail. He has never been able to produce in an etherized animal the shock produced by excessive nervous irritation, to which it is so often popularly ascribed. Review of the work of others leads him to believe they have had the same experience. The phenomena of so-called psychic shock, however, indicates at least in some instances that the nervous mechanism may be a factor, but the explanation is most difficult. He has found that exposure of the abdominal viscera produces shock in a decerebrated animal exactly similar to that in an etherized animal. In a few cases in which death occurred he has been unable to determine the cause.

Physiologic fatigue is not credited with any primary part

The Nephelometer.

Recent advances in medical science have found a new significance in the diastase enzyme and fat contents of the blood. The enzyme has the power to convert starch into dextrose and this ability becomes greater in diabetes, nephritis, and some other diseases. Thus the quantity of diastase enzyme in the blood is in direct proportion to severity of the disease and this factor has been held to be a better control than the estimation of blood sugar. In diabetes, nephritis and various forms of anemia, the amount of fat in the blood increases with the gravity of the ailment. With the aid of the nephelometer, it is now possible to measure accurately small quantities of fat in the blood and this test is now of direct value in diagnosis. The nephelometer, which was formerly used mostly in research work, therefore has now a practical value in the medical laboratory. Its use has also made possible marked advances in our knowledge of fat metabolism. Both these tests have lately been installed in the Battle Creek Sanitarium and have been found of especial value in cases of diabetes.

K-Y Analgesia.

In neuritis, is the hot water bottle the best anodyne? Palliation, by means of externally applied heat, is just as popular today as it was in Hippocrates' time.

The hot bath and the hot-water bottle are wonderful comforters. But who can be continuously in the bathtub, or who can be forever carrying a hot-water bottle? And how all too soon does the most faithful hot-water bottle lose its ardor and its temperature!

There is no simple adjunct in this category more simple and more genuinely effective than application by the patient himself, if possible along the course of the affected nerve, with K-Y Analgesic (methyl-salicylate, camphor and menthol, combined in a non-greasy, water-soluble base).

K-Y Analgesic has the obvious advantage over the hot-water bottle in that "it stays put" for a much greater period of time. Nor is there the possible danger of a hot-water bottle burn a factor especially to be thought of where the neuritis patient is weak and infirm.

The trouble with us is that self-sacrifice grows into our being; and we can not be brought to realize that we too have some rights, and that the world owes us also some enjoyment.

Nasal catarrh at birth or in early infancy is one of the most common causes of the failure to nurse successfully.

AMERICAN-MADE SALVARSAN

(DIOXYDIAMINOARSENOBENZENE DIHYDROCHLORIDE)— (EHRLICH'S "606")

Salvarsan is now being made in our new Brooklyn laboratories under the supervision of Dr. G. P. Metz, who was instructed in the processes of manufacture at Hoechst, Germany.

It corresponds in every detail to the standards set by the late Professor Dr. Paul Ehrlich, and is the only product made by the processes used at the Hoechst works.

As is well known, the slightest irregularity in the process of manufacture of Salvarsan may cause the formation in it of toxic by-products. In order to protect the public and ourselves against the effects of any accidental irregularities in manufacture, we ascertain toxicologically whether or not each lot of Salvarsan prepared by us is free from such toxic by-products. This knowledge is obtained for us by the head of the Department of Biological Chemistry in one of our leading university medical schools, who bears the same judicial attitude to our preparations that Prof. Paul Ehrlich did to the standard German preparations, and who subjects our preparations to biological tests that he considers more rigorous and comprehensive than those adopted for this purpose by Prof. Ehrlich himself. We will market only such lots of Salvarsan as have been throughly tested by this biological chemist and pronounced by him to be free from injurious by-products. The name of our biochemical collaborator will be given to any one who may wish to consult us regarding the nature and results of his tests of our preparations. Thus far his tests have demonstrated that the preparations of Salvarsan made by us were fully equal to standard Ehrlich preparations in their freedom from toxic by-products.

This American-made Salvarsan will be sold to the medical profession direct, until local agencies have been satisfactorily established. The price to physicians will be $2.00 for the 0.6 gram size, with lower prices for the smaller sizes. The price to hospitals and dispensaries for clinical and charity use will be $1.50 per ampule of 0.6, in 50 and 100 ampule containers.

FARBWERKE-HOECHST COMPANY

Pharmaceutical Dept. 111-113 Hudson Street.

H. A. METZ LABORATORIES, Inc.

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ASPIRIN

When the patent on ASPIRIN expired in February we explained our attitude to the Doctors and Druggists.

We announced

—that we would make ASPIRIN.

—that we would sell it under the name ASPIRIN.

—that we would protect against suit, by the owners of the former patent, any Druggist selling ASPIRIN-LEHN & FINK.

—that we would assume all the legal burdens, expenses and responsibilities in case of suit against any Druggist for selling ASPIRIN-LEHN & FINK.

This guarantee is still in full force and Druggists selling ASPIRIN-LEHN & FINK need have no worry as to any legal action on the part of the former patentees.

We feel sure you will be interested in these facts.

LEHN & FINK Inc., - - New York

Chronic Parenchymatous Nephritis (Nephrosis).

A. A. Epstein, New York, says that the term "chronic parenchymatous nephritis" is ordinarily applied to a variety of renal diseases which may be widely different in character, and the reason for his use of a single term in designating such distinct pathologic conditions is the fact that clinically these have many features in common: the oliguria, the intense albuminuria, and the edema. The intense and persistent albuminuria is the most striking feature. The daily output for weeks and months may amount to as much as 50 gm. The source of the albumin in the urine is the blood serum, and in view of the fact that the total quantity of protein in the blood serum in an average normal individual is approximately 210 gm., the daily loss may constitute a large percentage of that present in the circulation. As a result of the intense and prolonged albuminuria profound changes take place in the composition of the blood and a state of malnutrition is in evidence. In this disease the proteins may be much reduced, while the globulins show a relative increase. It is known that various infections and intoxications increase the proportion of globulin in the blood, and with other changes occurring, such as the accumulation of fatty substances, the increase in the globulin content indicates a tissue disintegration. The quantity of fats and lipoids accumulating in the blood in this disease is extraordinary, and such as is seen in no other condition of renal disease. The nonprotein nitrogens and chlorids may often range within normal limits or be slightly elevated. One reason for the low concentration of nonprotein nitrogen in the blood may be a large distribution of this constituent in the edematous tissues throughout the body. Deficiency in chlorids and high specific gravity of the urine is said by Widal to be a characteristic feature.

There are certain cases of diffuse nephritis in which some of the manifestations resemble those found in chronic nephrosis. Examples of this type are found particularly in two groups of conditions: First, during or after pregnancy, and second, in association with diabetes mellitus. The kidney of pregnancy, however, shows a high blood pressure, as that of chronic nephrosis does not, but this does not militate against the assumption that the intrinsic nature of the disturbance is similar to that of chronic nephrosis. He has observed three cases of this type of renal disease in diabetes in which the quantity of urine excreted was great and the albuminuria intense. In consequence of the polyuria, the edema in these cases was slight. Blood analysis showed changes like those already described, reduction of protein and predominance of pleted, and the dose of blood given will amply fortify the patient against any ill effects. It might be thought that if sodium citrate prevents coagulation outside the body, a similar influence might be shown in vivo with bad results, but this is not the case. He mentions in this connection the case of a child in a bleeder family suffering from severe hemorrhage after ritual circumcision, in which a transfusion from the father immediately stopped the hemorrhage. It has been well known that transfusion of whole blood acts usually as a specific in cases of this sort. The same is true of citrated blood and he refers to cases of severe hemorrhage thus checked. Outside of cases of actual bleeding, citrated blood has been efficient in severe cases of anemia, of which he gives instances.—(*J. A. M. A.*)

Myocardial Involvement.

B. S. Oppenheimer and M. A. Rothschild, New York, have studied the relationship of myocardial involvement to a certain type of electrocardiogram. *A priori* considerations led them to believe that there is an electrocardiogram characteristic of lesions involving part of a bundle branch or its arborizations. They prefer the term intraventricular block to that of bundle block in describing these conditions. In the course of the past few years there have been observed sixty-two cases in which the electrocardiogram indicated an intraventricular block, and they have studied and analyzed these cases noticing also its association to atrioventricular block, and describing the pathologic changes found on necropsy in fourteen cases. Their conclusions are as follows: "1. There has been a discrepancy between previous electrocardiographic interpretation and pathologic findings. 2. Theoretical considerations and pathologic findings point to the existence of a hitherto undescribed type of disturbance which we have called arborization block. 3. We venture to state, therefore, that there is a definite clinical combination to be known as arborization block; that this condition can be diagnosed by the presence of a definite and permanent type of electrocardiogram, and that the condition has a very serious prognosis."—(*J. A. M. A.*)

Stanolind

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Liquid Paraffin

(Medium Heavy)

Tasteless — Odorless — Colorless

In Treating Hemorrhoids

STANOLIND Liquid Paraffin, used regularly, very generally relieves hemorrhoids and fissure, even when of some years' standing.

Since these morbid conditions are usually the result of constipation, and are aggravated by straining, Stanolind Liquid Paraffin aids by rendering the intestinal contents less adhesive, by allaying irritation and thus by permitting the diseased tissues to become healed.

Where a contraindication for operative treatment exists, the use of Stanolind Liquid Paraffin in these conditions will frequently give relief from distressing symptoms and may even permit the parts to be restored to a condition where operative procedure may be postponed.

The ***special advantage*** of Stanolind Liquid Paraffin lies in the fact that its beneficial effects are not diminished by continual use, as is the case with almost any other laxative.

Stanolind Liquid Paraffin acts by lubrication and by adding bulk to the indigestible intestinal residue.

A trial quantity with informative booklet will be sent on request.

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The most modern plant in America for the manufacture of Surgical Dressings, Plasters, Medicated Soaps, etc.

TAUROCOL TABLETS

A Compound Containing the Bile Salts Sodium Glycocholate, Sodium Taurocholate with Cascara Sagrada and Phenolphthalein, for

HEPATIC INSUFFICIENCY, INTESTINAL PUTREFACTION, HABITUAL CONSTIPATION and GALL STONES.

TAUROCOL Directly Stimulates the Liver Cells, Producing an Abundant Flow of Bile Rich in Cholates, Solvent of Cholesterin and a Biliary Antiseptic.

DOSE: Three on retiring or one three times daily before meals, reducing dose as Bile increases.
Physicians are invited to send for samples, formula and literature.
Taurocol Tablets are obtainable from the leading druggists and through the wholesalers.

THE PAUL PLESSNER CO.
DETROIT, MICHIGAN.

Gastric Hemorrhage.

D. C. Balfour, Rochester, Minn., discusses the treatment, surgical and otherwise, of gastric hemorrhage which he divides into three groups: first, primary lesions in the stomach and duodenum, such as ulcer, cancer, tuberculosis, syphilis; and second, certain diseases and infections, not necessarily associated with recognizable changes in the gastric mucosa. The indications for surgical treatment of a patient with single or recurring gastric bleeding due recognizably from ulcer are positive. According to the experience at Rochester to perform only gastro-enterostomy in such cases is to court recurrence of the hemorrhage, and excision, preferably by cautery or resection, is imperative. The management of the ulcer has been the subject of considerable controversy. As a single ulcer is rarely fatal; the margin of safety usually allows delay until clotting can take place and death occurs only from repeated bleedings at comparatively short intervals. Recurrence of bleeding, therefore, after a serious hemorrhage is more than enough to indicate operating at once rather than risk further delay. In repeated continuous small hemorrhages transfusion has been found valuable not only in controlling the bleeding but in adding to the safety of future operations.

In the second group of cases without a surgical lesion, a variety of diseases are to be considered: (1) those attended with recognizable changes in the liver or spleen, such as cirrhosis and splenic anemia; (2) cases in which a chronic infective focus, like appendicitis or gallbladder disease is responsible; (3) a group including in the main such acute infections as typhoid, pneumonia, etc., in which no changes can be demonstrated either at necropsy or operation, and cases of "gastrostaxis" of Hale White. The diagnosis is not easy and the difficulty is exaggerated by the fact that in many conditions, such as those mentioned above of the appendix, gallbladder, etc., there occur digestive disturbances which can easily be interpreted as due to gastric ulcer and may be the cause of unnecessary operations. The close association of the spleen and liver in normal physiology and anatomy, and in disease processes, calls for the careful consideration of the spleen wherever the portal circulation is involved. The spleen or liver, or both, may be responsible for gastric hemorrhage without themselves exhibiting any other symptom of disease.

The treatment by splenectomy of moderately advanced hepatic cirrhosis is yet in the experimental stage, and Balfour does not feel justified in drawing conclusions from the operations performed. Nevertheless he says there appears to be a definite group of so-called primary hepatic cirrhoses due to toxins originating in or elaborated in the spleen. So in those cases splenectomy may be indicated if the spleen is large and be looked on as probably curative. It is significant that in those cases of gastric hemorrhage with very slight erosions in the gastric mucosa, micro-organisms may be obtained from these erosions and also from the spleen, and it has been shown that certain encapsulated bacilli will cause gastric and intestinal hemorrhages. Though differing in certain respects they are alike in having the power to produce specific effects on blood vessels and changes in the blood itself. The spleen must also be recognized as a positive causative factor not only of liver changes but directly or indirectly of gastric bleeding. The group of cases where there is an obvious focus of infection includes cholecystitis, pancreatitis, salpingitis, tuberculosis peritonitis and appendicitis. Gastric hemorrhage may occur and positive diagnosis be possible, but treatment as a rule is successful. The group of cases of serious hemorrhage without demonstrable cause has been the subject of much controversy. Unless the primary cause is found surgical treatment is not clearly indicated and the same is true regarding such acute infections as typhoid, pneumonia, etc.

There are several facts that strongly suggest that gastric hemorrhage occurs through the same channel in all, namely, the portal circulation. It is not impossible that these focal infections produce changes in the liver tending to hepatic cirrhosis, and it would seem also possible the resistance of the gastric mucosa can be thus reduced to permit the bacteria, always present, to set up these troubles. The proof that a gastric hemorrhage has taken place is essential and the determination and eradication of the original cause also, whether it is a chronic surgical lesion in the stomach or an extrinsic focus. The general indication of surgical treatment is to operate in the interval. The possibility that many of the extrinsic causes are toxic in nature should be recognized, and that the infection takes place by means of the portal circulation. Hence the liver is of first importance in these heretofore unexplained hemorrhages, and the spleen is also probably an important fact. —*(J. A. M. A.)*